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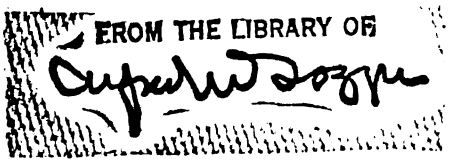

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THE TECHNIQUE OF PORCUPINE-QUILL DECORATION AMONG THE NORTH AMERICAN INDIANS

BY
WILLIAM C. ORCHARD

NEW YORK
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THE TECHNIQUE OF PORCUPINE-QUILL DECORATION AMONG THE NORTH AMERICAN INDIANS

BY

WILLIAM C. ORCHARD

INTRODUCTION

WHEN we consider the hardships connected with the primitive life of the North American Indians, particularly that of the wandering tribes of the great plains, it at first seems hardly possible that the women should have had either the inclination or the time to devote to elaborate embroidery; nevertheless there is abundant evidence of the fact that many hours have been spent on a single object in the desire to give expression to esthetic concepts. Examples of bead and porcupine-quill work attesting to the artistic ability of the Indians form a part of all well-known collections.

Porcupine-quill work is especially interesting by reason of the remarkably fine stitches that have been employed and the ingenuity displayed in the manipulation of the quills to produce effective designs. Indeed many specimens exhibit such skill as to be worthy of inclusion among the fine arts, where sewing and the selection of colors are important desiderata.

The purpose of this paper is to describe the technique and to attempt to bring about an appreciation of the complexity of the art of porcupine-quill work and the tireless patience that must have been exercised in producing such exquisite effects.

Specimens of the finest work were collected many years ago, and in most cases are without information as to their origin. However, comparison of technique and design with modern work, although vastly inferior, has furnished clues, so that the probable source of production may be given for those earlier and finer specimens.

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The drawings and explanations of the folding of the quills and stitches are chiefly the result of technical analyses. Some of the simple foldings have been demonstrated by modern workers. Only the constructive branch of the art will be considered.

Specimens have been collected from Alaska to Maine, including the woodland tribes and those of the great plains, and, as might be expected, they show conformity in design peculiar to the various tribes. The desire for designs of symbolic import stimulated the inventive genius of the artists, so that a remarkable number of complex foldings of the porcupine-quills and stitches have been devised.

Thanks are due to the officials of the United States National Museum at Washington, the American Museum of Natural History, New York City, and the Field Museum of Chicago, who kindly afforded facilities for the examination of their collections. The extensive collections of the Museum of the American Indian (Heye Foundation) in New York, generously placed at my disposal in connection with this study, have been of valuable assistance in furnishing all but two of the techniques described.

Early Use of Porcupine-quills

In the records of early explorers of North America occasional though somewhat indefinite references are made to the decorative art of the aborigines. Among the materials used as a means of decoration, porcupine-quills are frequently mentioned. Harmon, in his *Journal of Voyages and Travels in the Interior of North America*, writes: "The women manifest much ingenuity and taste in the work which they execute with porcupine quills. The colour of these quills is various, beautiful and durable, and the art of dyeing them is practised only by the females." In *Manners and Customs of Several Indian Tribes*, John D. Hunter mentions men's headdresses as being "neatly ornamented with feathers, porcupine quills, and horsehair stained of various colours . . . their waist-cloths, leggings, and moccasins, omitting the feathers, are decorated in the same manner as their caps." Other writers might be quoted who in a similar manner mention this particular form of decoration,

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SKETCH MAP OF NORTH AMERICA

The dotted areas indicate the location of tribes which have produced porcupine-quill work and which were not living in those parts of the country where the porcupine might be found. The territory enclosed by cross-lines is the habitat of the porcupine. According to some old Sioux informants occasional hunting trips were made for the sole purpose of obtaining porcupine-quills, but more often quills were used as a medium of exchange by the people living in the porcupine country.

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hence it is reasonable to suppose that porcupine-quill work is an art whose practice antedates the advent of people from the Old World and their influences on the arts of the American aborigines.

Distribution

The porcupine has a widely distributed habitat in the northern part of the North American continent. Reference to the map (pl. II) will show the boundary-line extending from northern Labrador and across the southern shores of Hudson bay, northwesterly to beyond the Arctic circle in Alaska. The southern line includes New Brunswick, Nova Scotia, and Maine, thence follows a southerly trend into Pennsylvania, whence it turns toward the north and includes the Great Lakes region, pursues a northwesterly course to Alberta, there making a sudden turn toward the southeast, following the Rocky mountains and crossing the northwestern corner of Colorado and the southeastern part of Utah, through Arizona to the California line, there turning to the northeast, clearing Nevada and passing through Idaho, to British Columbia and Alaska. A narrow strip of territory extends toward the south, including the Cascade range, parts of the states of Washington and Oregon, and northern California.

A point of interest in connection with the habitat of the porcupine is the fact that this animal is not found in the country inhabited by those tribes which are today and have been in the past the producers of a great quantity of porcupine-quill embroidery. This may indicate that our Indian friends, like white people, desired the things most difficult to obtain for their personal adornment. On the other hand, Labrador and Alaska are included within the boundary, but the natives of those regions, excepting the Tlingit, have not contributed to the collections so far as can be learned.

Bird-quill Work

The Alaskan Eskimo, however, have made use of bird-quills, which, after being stripped of the rami, are split and the pieces woven into designs for belts. Figure 1 is an enlarged drawing of such a piece of work. It will be seen that the split quills are woven

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over and under a series of warp strands, and edged with a strand along the face of the work, which is caught by another strand along the back, passing through between the quills at somewhat regular intervals and looping over the strand in front. The drawing indicates an alternation of colors, black and white. To effect this there is a double layer of quills, laid in series of threes or fours.

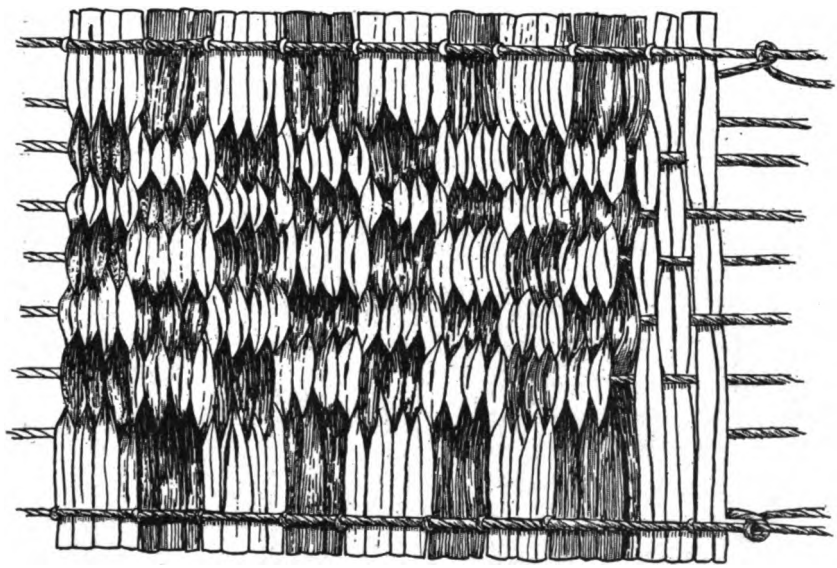

FIG. 1.—Bird-quill work of Alaskan Eskimo. (Enlarged.)

In the upper left-hand corner of the figure are four white quills, while black quills come to the front beneath them; still farther below the white quills are brought forward, and so on to the end. Although the lines are irregular, the effect is suggestive of the checker-board pattern. The finished weaving is sewed to a strip of leather, the edges of which are turned up and over the ends of the quills.

Bird-quills have been used to a small extent, either independent of, or in connection with porcupine-quills, by the North American Indians. Before discussing the technique of the art of porcupine-quill embroidery it may be well to introduce at this time a description of some of the pieces of bird-quill work that have been examined in connection with the preparation of this paper.

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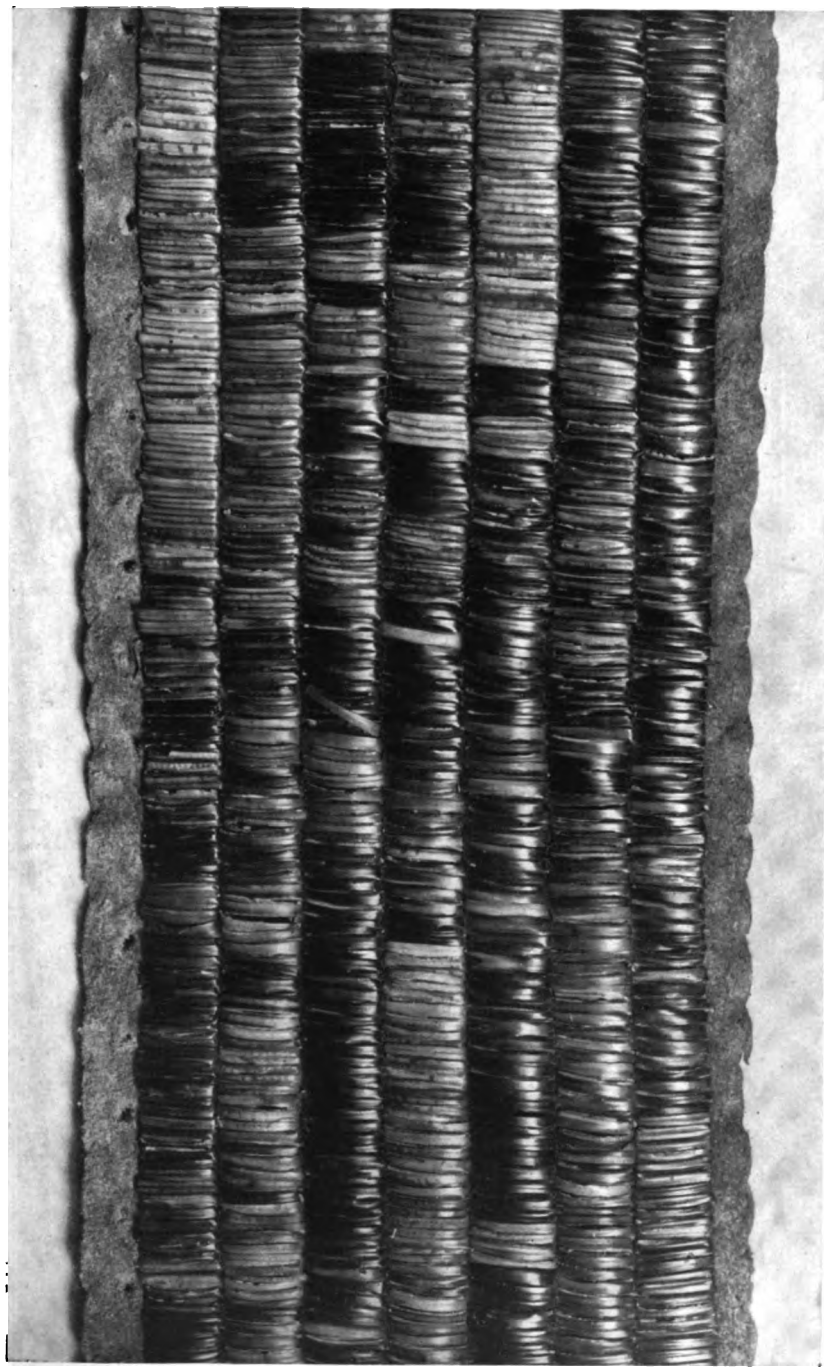

BIRD-QUILL DECORATION. HIDATSA

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A split bird-quill is frequently found where an edging has been made, either on the extreme edge of a piece of leather that has been decorated, or surrounding a pattern that has not been worked out to the edge. In such cases the bird-quill has been used as a filler, that is, the porcupine-quills are wrapped around the bird-quill and then sewed to the leather, as shown in figure 48. In some instances, however, a strip of leather or a cord has been used for the same purpose, perhaps because the bird-quill was too stiff to produce the soft, graceful curves obtainable with other materials.

The best examples of work examined in which bird-quills have been used exclusively are to be found in the Museum of the American Indian. These consist of five pieces, 3¾ inches wide, the total length being 9 feet 4 inches (pl. III), and no doubt were intended to be used in a single long strip, in all probability as a decoration for a tipi cover. The method employed in fastening the quills is shown in figure 8. There are two objectionable features in the use of bird-quills, namely (1) the uneven, ragged appearance of the edges, due to splitting, which to a great extent mars the neatness that is so characteristic of the work in which quills of the porcupine are used; (2) they do not make a clean, sharp fold where they are turned under the stitches, hence the edges of the patterns are uneven and the whole presents the appearance of an inexpert piece of work, and to the stiffness may be due the absence of any form of decoration other than geometrical.

One or two instances have been noticed in which the two kinds of quills are used alternately in working bands of embroidery, and there are some examples in which grass has been employed in the same manner.

Materials for Porcupine-quill Work

During the summer of 1911 the writer made a hurried trip through the Sioux reservations in North Dakota and South Dakota, and a visit to the Ojibwa living near the shores of Georgian bay, Ontario, for the purpose of gathering all available information regarding materials and the various methods of preparing them, as well as of gaining an insight into the processes employed in the art of porcupine-quill work.

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The designs were worked out mostly on soft tanned leather or on birchbark. An exception, however, is a woven technique which will be described. The tanning of leather or deerskin has been described by others, hence the necessity of here describing that process is obviated. The preparation of birchbark consists merely of shaping, perhaps splitting, and laying out the pattern to be worked. Hunting the porcupine fell to the lot of the men, and so far as could be learned, they sometimes plucked the quills from the living animal. One method of capture was to trace a porcupine up a tree by means of the freshly gnawed bark; the bow and arrow, or in later days a gun, was then used to dislodge it. Another method was to find a burrow that bore evidence of being inhabited, when the porcupine was dug out. A soft-tanned skin or a blanket was used to prevent escape. Various kinds of traps also were used.

Considerable attention was given to the sorting of the quills as they were plucked, which operation was performed without removing the skin. Four sizes of quills were found on the animal, and were graded accordingly. The largest and coarsest came from the tail, which were used in broad masses of embroidery, where a large surface was to be entirely covered, or for wrappings on club-handles, pipe-stems, and fringes. The next size came from the back, and still smaller quills from the neck. The finest were taken from the belly, and were used for the most delicate lines so noticeable in the exquisite work to be found in early specimens. The various sizes were kept in separate receptacles made from a bladder of an elk or a buffalo. After the quills were all plucked, the hair was singed from the body and the animal was cooked entire, being a highly esteemed delicacy.

Dye Materials and Dyeing

The selection of materials used for coloring was governed to a great extent by the locality in which the work was to be done, although sometimes long journeys were made to procure choice materials to serve as ingredients for making dyes.

Since the introduction of aniline dyes very little use has been made of the native products, consequently present information

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respecting the old methods is sometimes vague, and early writers refer but little to the subject. From Maximilian[1] we learn that among the Blackfeet, "to produce the beautiful yellow colour, they employ a lemon-coloured moss from the Rocky Mountains, which grows in the fir trees. . . . A certain root furnishes a beautiful red dye, and they extract many other bright colours from the goods procured from the Whites. With them they dye the porcupine quills and the quills of the feathers, with which they embroider very neatly." The Cree women, according to the same author,[2] "understand how to dye a beautiful red with the roots of *Galium tinctorum* and *boreale*, and black with the bark of the alder."

Harmon,[3] writing of the Indians living east of the Canadian Rockies, furnishes a little more detailed information: "To colour black, they make use of a chocolate coloured stone, which they burn, and pound fine, and put into a vessel, with the bark of the hazel-nut tree. The vessel is then filled with water, and into it the quills are put, and the vessel is placed over a small fire, where the liquor in it is permitted to simmer, for two or three hours. The quills are then taken out, and put on a board, to dry, before a gentle fire. After they have been dried and rubbed over with bear's oil, they become of a beautiful shining black, and are fit for use. To dye red or yellow, they make use of certain roots, and the moss which they find, on a species of the fir tree. These are put, together with the quills, into a vessel, filled with water, made acid, by boiling currants or gooseberries, &c., in it. The vessel is then covered tight, and the liquid is made to simmer over the fire, for three or four hours, after which the quills are taken out and dried, and are fit for use, . . . and these colours never fade."

As a result of many inquiries made of the old people on the Sioux reservations in North Dakota and South Dakota, it was learned that native materials for dye-making were plentiful and varied in the old days. After numerous and extended talks with groups of the older members of the tribes, some interesting notes

[1] Maximilian, Prince of Wied, Travels in the Interior of North America, 1832–34, Thwaites ed., pt. II, pp. 103–104, Cleveland, 1906.

[2] Ibid., p. 13.

[3] A Journal of Voyages and Travels, pp. 377–378, Andover, 1820.

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on the old-style method of dyeing were obtained, and in some instances the materials were produced for identification. There is a possibility, however, that some of the details of the dyeing processes are forever lost.

The buffalo-berry and squaw-currant were used for producing a red dye, but the former was preferred because it is more succulent than the squaw-currant, which has a large seed with a thin skin and consequently required a greater quantity to produce the desired color. The operation of dyeing consisted simply of boiling the fruit and porcupine-quills together in water until the required color was obtained. Sometimes dock-root was used in addition to the fruit, because it produced a brighter and stronger color. Care was exercised in collecting the root, as the "mother," not the "father" plant, must be used; the difference between the two plants was recognized by the flowers.

Wild grapes were used for making black dye of superior quality, while a good substitute was found in hickory or walnuts when grapes were not obtainable. The nuts, gathered green (that is, before the hard shell had formed), were laid in the sun and occasionally sprinkled with water until they turned black, and then were boiled in water with the quills. The resultant color was a brownish-black, and consequently was not so satisfactory to the discriminating artist as that produced by the grapes.

Wild sunflower and cone flower (*Ratibida columnaris*) were used for producing yellow dye. The petals, with pieces of decayed oak-bark or the roots of cattail, were boiled in water with the quills. The bark of a certain pine tree "found only in the Black Hills" is said to have been another medium for producing yellow dye.

Blue dye seems to have been unknown, at least among the Dakota Indians, in the early days. After the introduction of aniline colors, however, blue came into use, and later, when the Government issued blankets to the reservation Indians, a piece of an old blue blanket was boiled with the quills to produce that hue.

Among the Ojibwa of Georgian bay it was learned that tamarack bark produced a red dye of medium shade, and that a darker color was obtained by using spruce-cones. Another shade of red was

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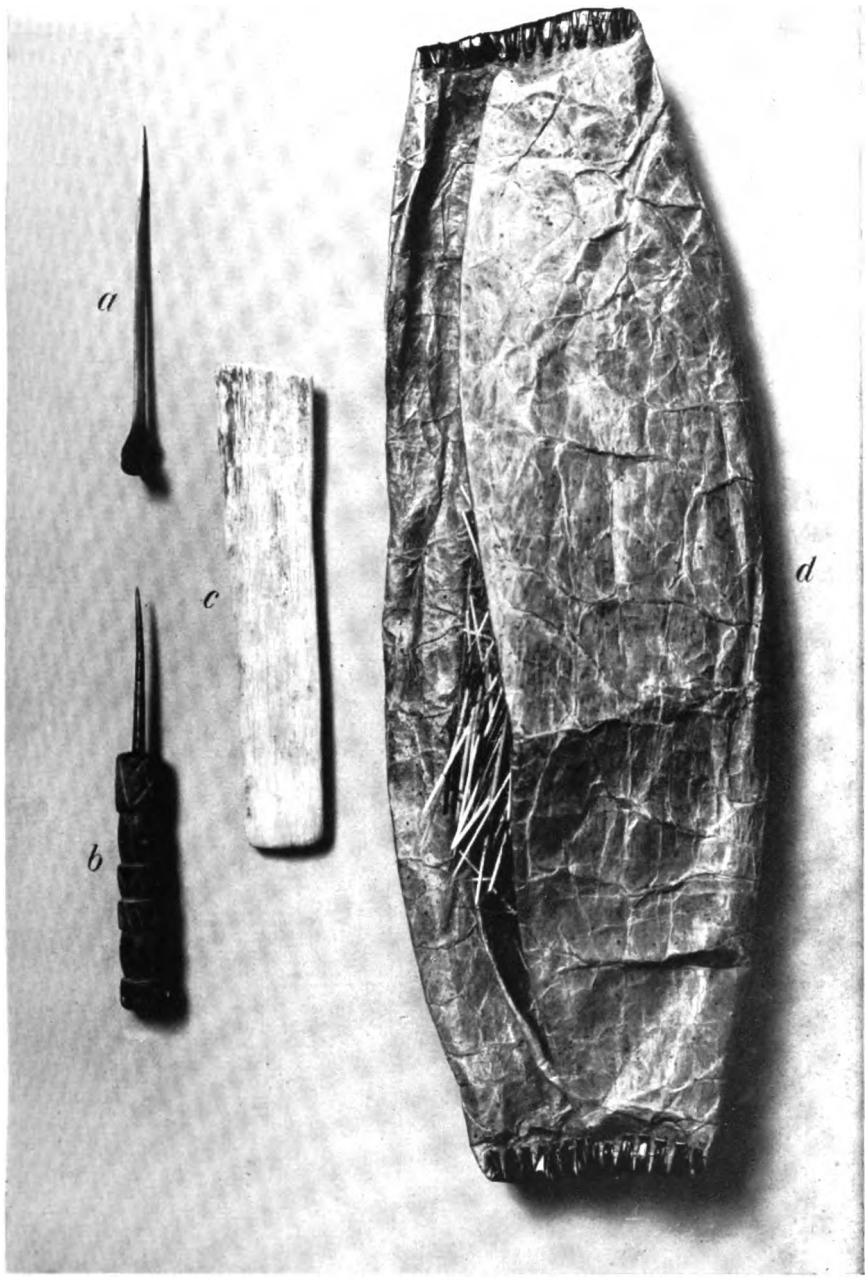

SIOUX QUILL-WORKER'S TOOLS AND QUILL POUCH (*a*, *b*, AWLS; *c*, BONE MARKER)
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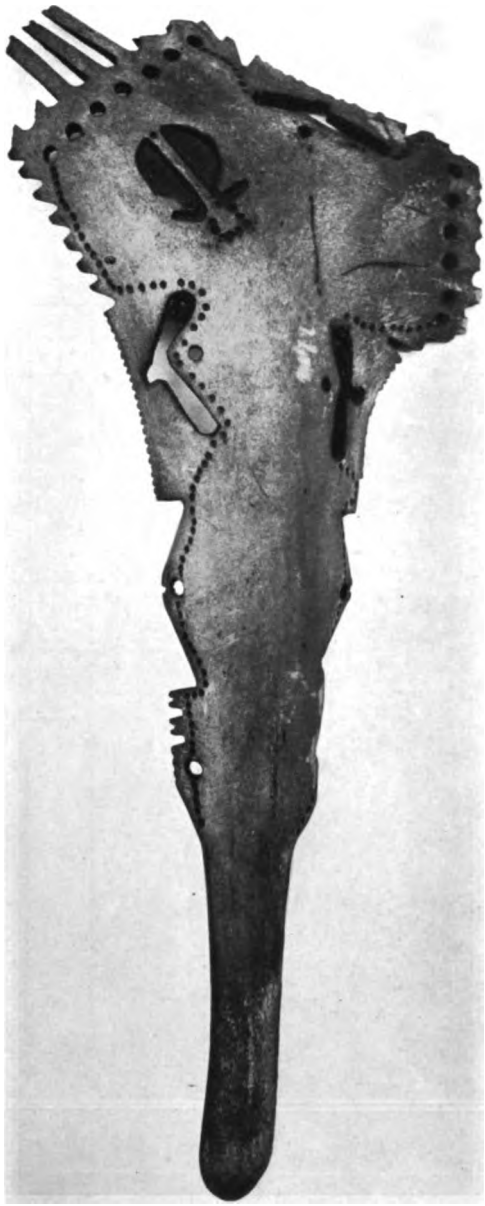

PORCUPINE-QUILL FLATTENER. SIOUX
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obtained from sumac berries. Yellow dye was made from the roots of black willow, but a much brighter yellow was obtained from fox moss, *Evernia vulpina*, which was rarely used because difficult to procure. The inner bark of hemlock produced a brownish-red, but apparently was not considered a good color by the old people. Blueberries afforded a color approaching purple. Larkspur was spoken of as having been used to produce pale blue.

These few notes on dye materials were collected from four very old people, but it was not possible to obtain any details other than that the quills were boiled in concoctions made from the various products mentioned.

Implements Used in Quill-work

The modern artist's outfit (pl. IV) is not very extensive, consisting merely of a pouch for holding the quills, a bone marker for tracing the design on the leather or birchbark, some awls, a bunch of sinew strands, and a knife. Sometimes a pair of scissors may be found in a modern outfit, but rarely a commercial needle or a thimble. It is safe to say that nearly all the modern quill-workers still use an awl and sinew without a needle to perform their work.

There is no reason to believe that the quill-workers of earlier days possessed anything more elaborate in the way of tools, unless an exception may be made of the quill-flattener, of which there are a few in existence, decorated with elaborate carvings as illustrated in plate V. It is not certain, however, that such an implement was used commonly to flatten the quills, as it is so much easier and more practical to meet that need of the process by simply holding one end of the quill between the teeth and drawing the thumb-nail, tightly pressed, lengthwise of the quill—the method used by present-day quill-workers. Aside from this, the so-called quill-flatteners are large and somewhat cumbersome (the specimen illustrated is 14 inches long), hence their use would result in a loss of energy, if not of time, when it is considered that each quill is flattened immediately before it is used, because it would be necessary to take up and lay down the instrument many times during a day's work. Some quill-flatteners are made of bone, others of antler. A few

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other objects may be found in a workbag, such as a whetstone, perhaps some patterns, and many trinkets that may not be necessary to the work in hand.

A thread of sinew was used for sewing the quills to the leather. The fiber of which this thread was made was stripped from the large tendons along each side of the backbone of the buffalo or deer. The raw tendons were dried and shredded, and sometimes twisted into hanks ready for use. A suitable strand being selected, it was moistened, one end pointed by twisting between the thumb and forefinger, and then allowed to dry. A point so treated would easily follow an awl-hole in the leather. The other part of the thread was kept soft and moist by occasionally applying saliva with the finger-tips.

This item of information was furnished by an old woman at Pine Ridge, South Dakota. Doubtless the same method of preparing and using sinew thread was employed by the early quill-workers.

James Adair, in his *History of American Indians*, says: "The needles and thread they used were fishbones, or the horns and bones of deer rubbed sharp, and deer sinews, and a sort of hemp that grows among them spontaneously in rich, open lands."

Designs were laid out with the aid of cut patterns, sometimes made of rawhide or birchbark, or were drawn freehand. The marker, a thin, flat piece of bone, three or four inches long by one inch wide, with smooth, rounded edges, was used as a pencil to follow the cut pattern, or, without such guide, was dipped in a dark-colored fluid, or the marks were made by simply rubbing the edge of the bone on the leather, which left a mark not easily erased. In this part of the work the women oftentimes were aided by suggestions from the men.

Material for making a "dark-colored fluid" was collected on the Pine Ridge reservation, South Dakota, and is part of a very old painting outfit which consists of bone marker, pieces of wedge-shaped bone pith used for applying the color, and various earth colors, including a fine, soft, black powder, described as being "mud from a river-bottom a long way off to the northwest." Ac-

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cording to my informant, many years ago this black mud was obtained by trading with the Indians from the northwest, and was in great demand for marking out patterns and for picture-writing on skins. A solution was made by mixing the dried mud with water. Sometimes a small quantity of blood was added as a binder.

Stitches

Several kinds of stitches are used in fastening the quills to the leather, which for convenience in description I have named as follows:

Spot-stitch—The first and most simple is spot-stitch (fig. 2). In the drawing it will be seen that the sinew thread passes straight ahead, and is spotted through the surface of the leather at regular

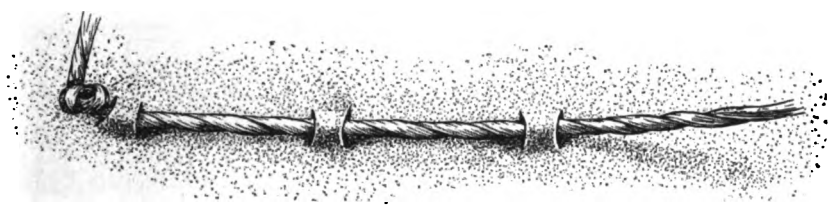

Fig. 2.—Spot-stitch.

intervals, the exposed part of the sinew forming a loop which holds the quill. It can easily be seen that such a stitch can follow a curved line.

Back-stitch—The second I have designated back-stitch (fig. 3). In this case, in sewing from left to right, the awl is thrust through the surface of the leather with the point inclined toward the left and pointing upward. When the sinew is drawn tight, the fibers of the leather are caused to twist and grip the sinew, so that the stitch cannot slip. The stability of this stitch was apparently fully realized by the Indian artist, as it is found in most of the specimens of early work, and is used to some extent by recent workers.

Loop-stitch—The third may be called a loop-stitch (fig. 4). An incision is made through the surface of the leather by pointing the awl upward. The sinew is passed through the opening in the same direction as the awl was made to take, then made to cross itself

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and passed on to the next incision, when the operation of passing through the leather and crossing is repeated. It may be understood from the drawing that a stitch so formed with a moistened

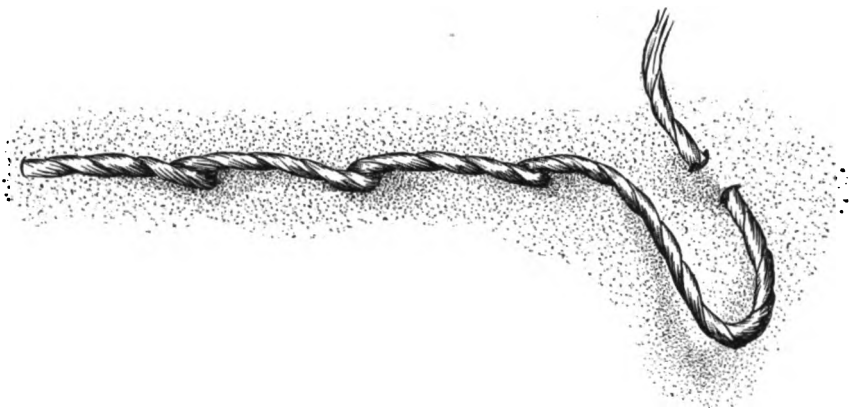

FIG. 3.—Back-stitch.

sinew thread, when pulled tight, cannot possibly slip, but makes a firm and lasting stitch.

A remarkable feature in porcupine-quill work is that even in the very oldest specimens examined the stitches had rarely pulled out, although the quills may have been worn away and perhaps

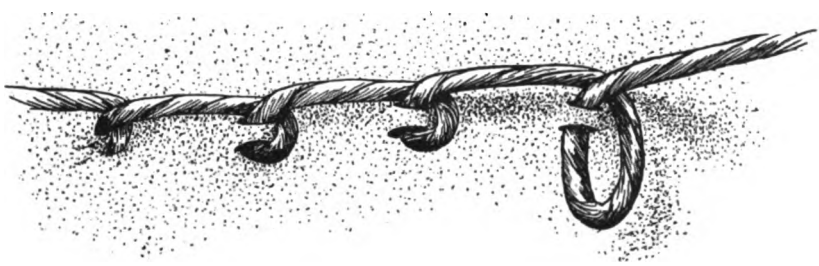

FIG. 4.—Loop-stitch.

the exposed sinew had worn off, but the ends still held fast in the leather.

A point of interest in connection with the sewing, which will be well to emphasize at this time, is the fact that the stitches were never carried through the leather from back to front, but were

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caught only under the surface, even when very thin deerskin was used. The reason given for this, by an old woman on the Crow Creek reservation, who at the time of my inquiry was embroidering a large pouch, was, "that it is hard to guess where to push the awl through from the under side without turning the piece of leather over." There is no doubt that the position for the stitch can be more readily found by working from the upper side, especially where a large surface is being decorated. Also a much finer stitch can be made when the thread is passed through the surface only. Sometimes a knotted end of the sinew may be found on the reverse side.

SPLICING

Owing to the shortness of porcupine-quills, it became necessary to formulate a system of splicing, or inserting additional quills, in such manner that the ends should be secure and concealed. A common method seems to have prevailed among all quill-workers. To facilitate the explanation of the numerous techniques employed in the art of quill-work, the splicings will be described at this time; and unless otherwise stated it may be understood that these methods have been made use of in the work hereafter to be treated.

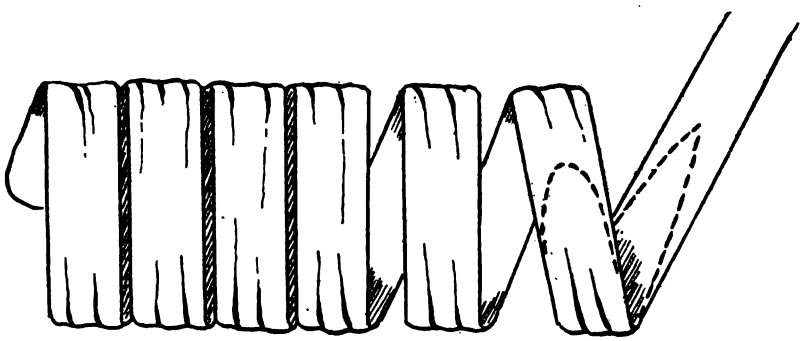

FIG. 5.—A method of splicing.

A very simple though effective splice, illustrated in figure 5, is made use of in a majority of the techniques. As the drawing shows, when the end of a quill has been reached in embroidering, a new quill is added and secured by laying its point inside the fold of the last quill, where a stitch is made across the overlapping

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extremities. The dotted lines in the drawing indicate the positions of the two ends. This splice has remarkable holding quality, in some measure due to the fact that the quills were moistened and flattened when being used, thus rendering them soft and pliable; after they became dry they were stiff and could not change their position. This splice has been employed in the braiding used for pipe-stems, etc., described in connection with figures 32 and 33.

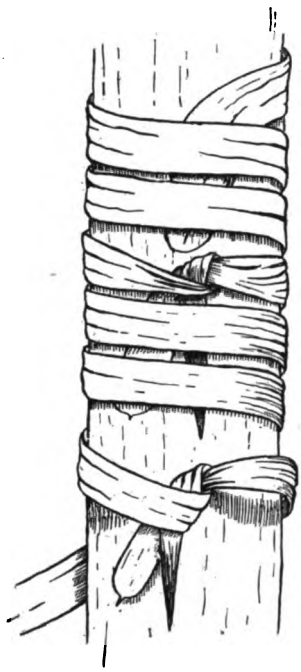

FIG. 6.—A method of splicing.

In making a splice where a strand of fringe or some slight object has been wrapped with porcupine-quill, the two ends were twisted and turned under the wrappings (fig. 6). Such splices are always found on the back of the object so decorated, or as much out of sight as possible, the front or better side showing a continuous and even wrapping.

One other method has been observed, although not a very common one, which may be called "telescoping," that is, the point of an added quill has been thrust into the end of the preceding one (fig. 7). This mode of splicing has been found only where unflattened quills have been used.

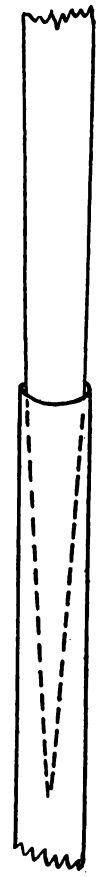

FIG. 7.—Splicing by "telescoping."

Of the various methods employed in fastening the quills to leather, where broad masses of solid embroidery are desired, the most simple form seems to be that shown in figure 8. As may be seen in the drawing, the spot-stitch is here used. The quills are held in place by two rows of stitches, the sinew thread being caught into the surface of the leather between each fold of the quills. Such

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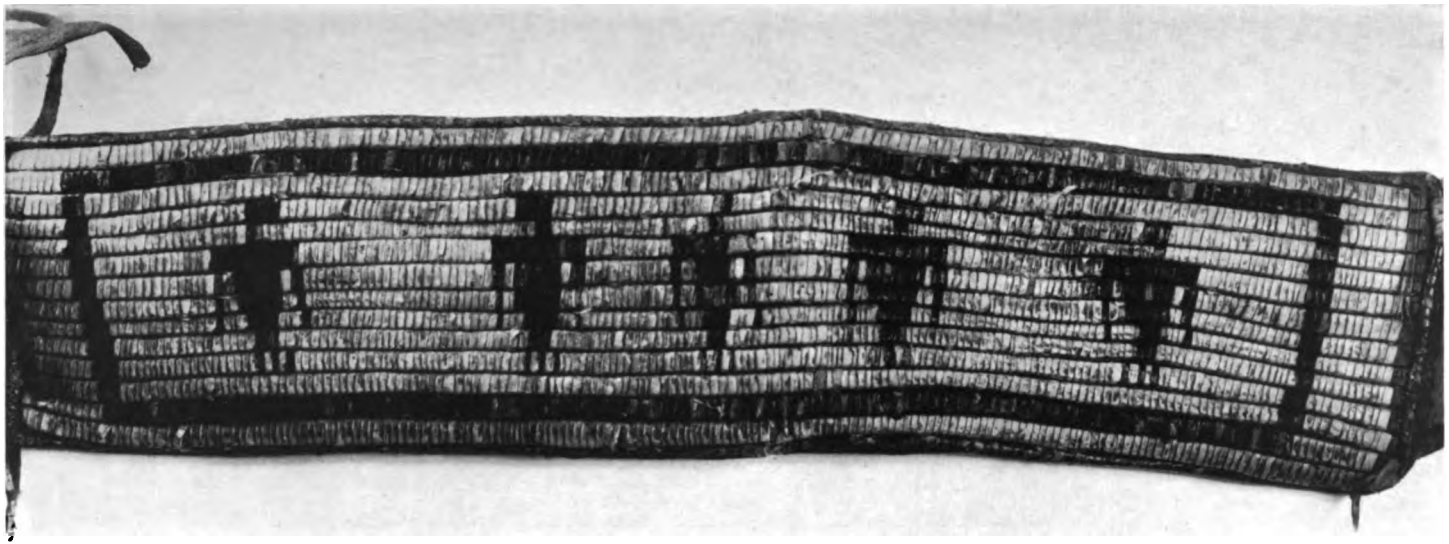

ARM-BAND FROM SAUK AND FOX WAR-BUNDLE

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bands of embroidery vary in width from one-eighth to five-eighths of an inch, or in rare instances to three-quarters of an inch, and are worked side by side until the desired area is covered.

Should the space to be decorated be other than square or rectangular, as for instance the toe of a moccasin, the lines of stitches

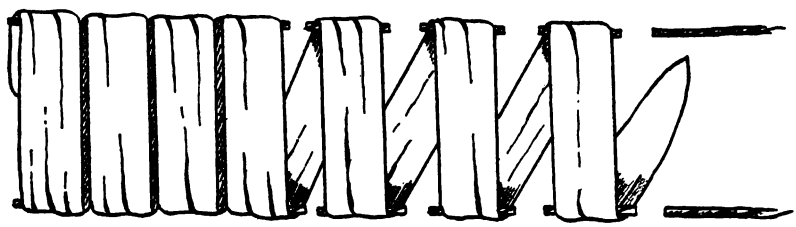

FIG. 8.—Method of fastening quills to leather.

and folds of the quills converge, so as to conform to the shape of the area. By the use of contrasting colors, geometrical designs have been worked out. In some instances the effect has been elaborated by a widening or contraction of the rows of quill-work. An interesting addition to this method has been noted on some recent Hidatsa work (fig. 9), in which stitches have been made along the center of the rows or bands of quill-work over the surface. As

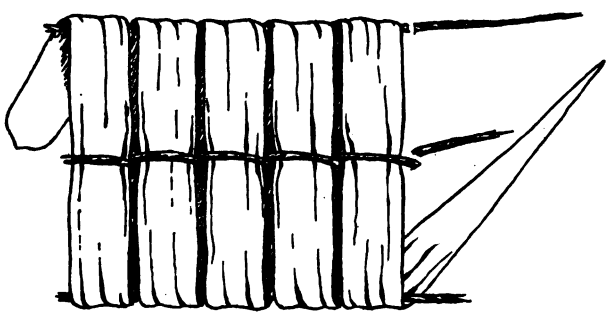

FIG. 9.—Hidatsa quill-work with stitches along center.

the bands are not so wide as to demand such sewing for strength, it is probable that additional ornamentation was the object in view. The extra stitch is the back-stitch.

According to observations made among modern quill-workers, it was found that such bands of quills were worked from left to

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right. The lines of the bands having been drawn on the article to be decorated, a sinew thread is made fast at the respective starting points of both rows of stitches; a quill is then laid in the first position at the top of the band, a stitch is made over that end, and the quill is turned over the stitch, when another fold is made at the proper distance to conform to the width of the band. The sinew thread at the lower line is now passed through the fold and caught into the surface of the leather as close to the quill as it is possible to get it.

It will be seen from the drawing (fig. 8) that in the last mentioned folding, at the bottom of the band, the quill is folded under itself, and then passes on diagonally across the band to the next position at the top, where another fold and a stitch are made. The distance between the folds has been exaggerated in the drawing in order to show the movement of the quill, which if drawn correctly would be obscure.

There are a number of instances in which a strip of rawhide has been used as a filler, that is, the quills have been wrapped around the strip, and the stitches made in the usual place where the folds in the quills have been made, as shown in figure 10. This method seems to have been used to some extent by the Haida and

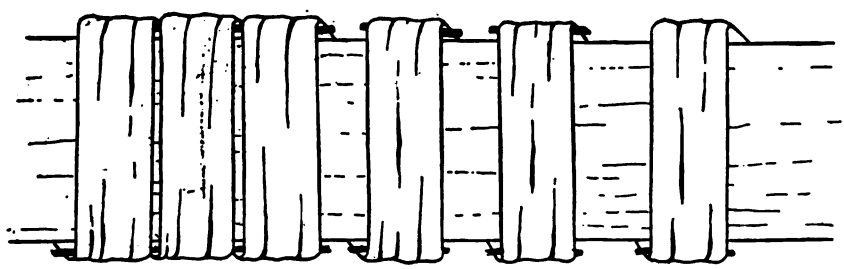

FIG. 10.—Strip of rawhide used as a filler for quill-work.

Tsimshian. A specimen of the same technique, however, has appeared on an arm-band in a very old war-bundle collected from the Sauk and Fox Indians, illustrated in plate VI.

In consequence of having the strip of rawhide under the quills, the work does not have that close, compact appearance so noticeable when the strip has not been used. The arm-band has been further ornamented with an elaborate fringe fastened to one end, com-

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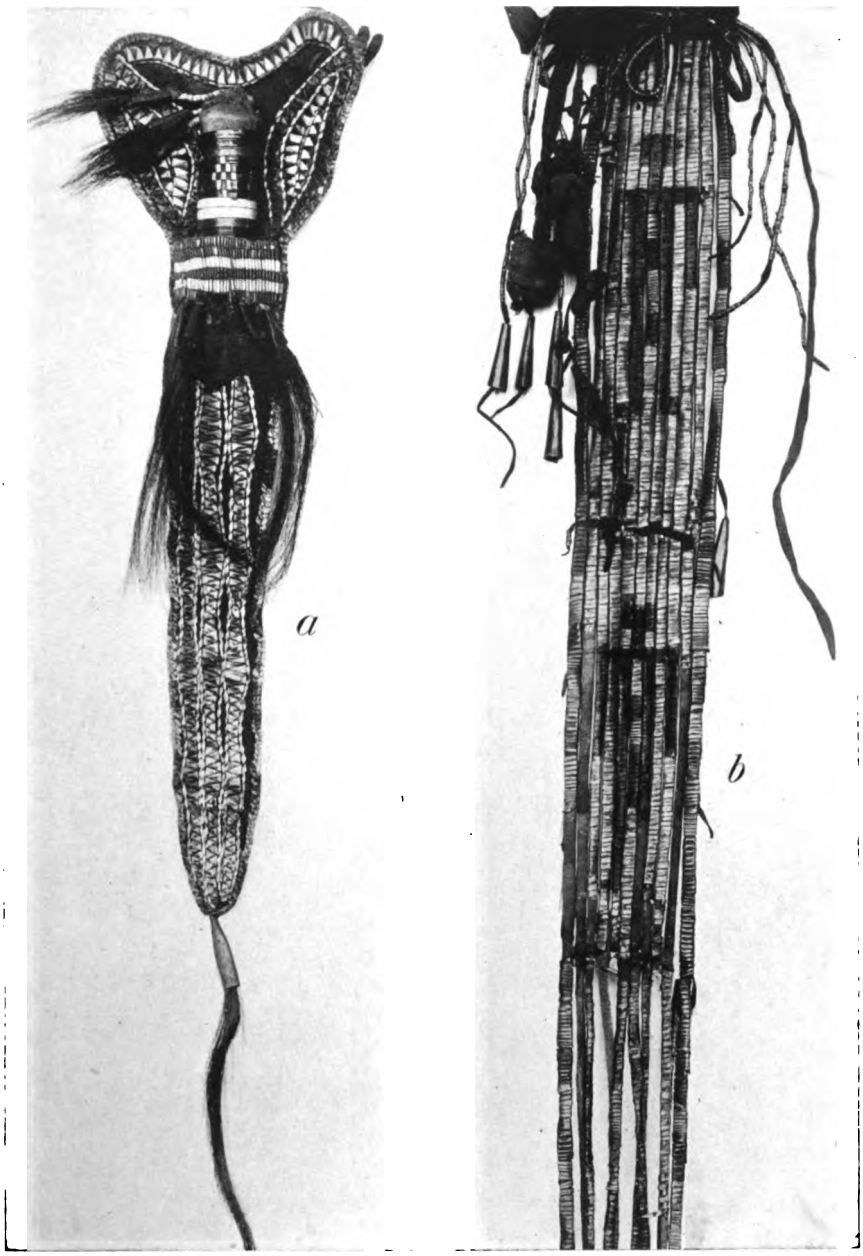

KNIFE-SHEATH. DELAWARE FRINGE OF ARM-BAND. SAUK AND FOX

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posed of eleven strips of rawhide wrapped with porcupine-quills in the manner described for figure 6. The fringe was originally decorated with three, perhaps four, human figures. The design is produced by the introduction of various colored quills at measured intervals. The figures are about three and one-half inches long, and in the center of each body a short wrapping of bird-quill has been applied.

Plate VII, *b*, illustrates a section of the fringe showing two figures; there are indications of the third, but the condition of the specimen is such that the presence of a fourth figure is not at all certain. The specimen is a well-executed piece of the decorated fringe technique.

Although the spot-stitch is so simple, it does not appear to have been used so commonly as the back or loop stitches, and in all probability the better holding quality of the two last named stitches was fully appreciated. A majority of the specimens of quill-work examined, in which bands of embroidery have been used, show the use of the back-stitch or loop-stitch; and sometimes both stitches have been used on one band, that is, the top edge is held by the loop-stitch while the lower is held by the back-stitch.

The modern quill-workers have introduced another thread in connection with these bands of embroidery, one which I have been

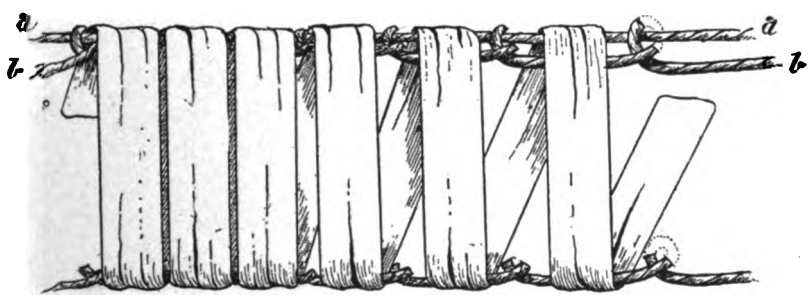

FIG. 11.—Quill-work showing an additional thread.

unable to find in any of the old specimens. In figure 11 the added thread is marked *a*. The loop-stitch is always used with it, and the additional thread is employed only along the top edge of the band. In connection with this, a fact to be noted is that I have

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never found anything but a commercial thread used for that marked *a*.

The illustration shows the two threads *a* and *b* starting off together at the upper edge of the band, after being knotted into the leather. A turn of the quill is made, and then follows a loop-stitch by thread *b* through the leather and over thread *a*. At the lower edge a stitch and a fold of the quill are made, when the first operation at the upper edge is repeated, and so on until the band is completed. While the sewing is proceeding, the thread *a* is kept taut by having the end not fastened to the work wrapped around a small stick which is tucked into the quill-workers' moccasin. Being thus held, the thread can be tightened or slackened as required.

No satisfactory explanation of the function of the extra thread could be obtained from the many quill-workers with whom I came in contact. One woman explained that by drawing the thread tight under the fold, "it made the quill lay flat and close to the leather." Another said, "That is the proper way to do the work;" still another explained that "it was only a fashion," and that just as good work could be done without the extra thread. This last statement is a truth which may be well substantiated by comparing modern work with specimens of earlier days. The use of the additional thread is found not only in broad bands making up solid masses of embroidery, but is invariably made use of in narrow bands such as is shown in plate VIII, which illustrates a small calfskin with nineteen bands of embroidery, each band one-eighth of an inch wide, every one of which is sewed to the skin with two rows of stitches including the linear thread. It may be readily understood that a great amount of patience must have been exercised in performing such work.

Figure 12 illustrates an entirely different effect, produced by a change in the method of folding the quills. Compared with figure 8 it will be seen that the quill coming from the upper edge passes under the stitch at the lower edge of the row, and, crossing diagonally to the upper edge, passes under the stitch at that point, then turning over itself toward the lower edge, makes an interlocking saw tooth pattern, instead of the parallel bars shown in figure 8.

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CHILD'S PUBERTY ROBE. SIOUX

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IROQUOIS MOCCASIN SIOUX MOCCASIN

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An interesting variation of this process is illustrated in figure 13. As the drawing shows, two quills have been used, the diagonal crossings extended and the quills overlapping those crossings alternately. The folding is practically the same as that shown in figure 12, but the overlapping of the added quill has produced a

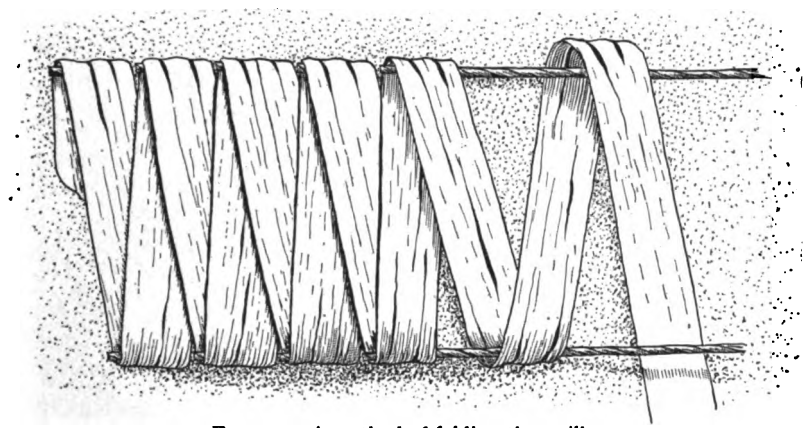

FIG. 12.—A method of folding the quills.

surface pattern of entirely different appearance. A striking effect is produced by the use of quills of contrasting colors.

The methods of folding illustrated by figures 8, 12, and 13, are those used in single-band decoration or in covering broad surfaces. Designs are introduced by the use of variously colored quills or by

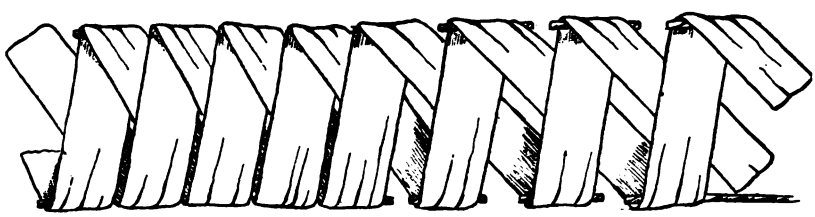

FIG. 13.—A method of folding the quills.

changing the position and the widths of the rows. The designs produced by this technique are of a geometrical nature, a good example of which is shown in plate IX.

An intricate method of crossing and folding is shown in figure 14, the details of which may be clearly traced. The specimens on

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which this technique occurs consist of two snake-skins, found in an Iowa war-bundle. They are decorated on one side only, and but a short length of the surface is covered. Three rows of the quill-work were laid side by side (the drawing shows only two). Red and yellow quills were used, and so folded that the yellow quills form a diamond-shaped pattern across the whole embroidery, the red quills producing a smaller diamond enclosed in the yellow pattern. The drawing shows the quills spread apart abnormally, but when drawn close together a solid, well-defined pattern is the result. Spot-stitches are looped through the turn of the quills

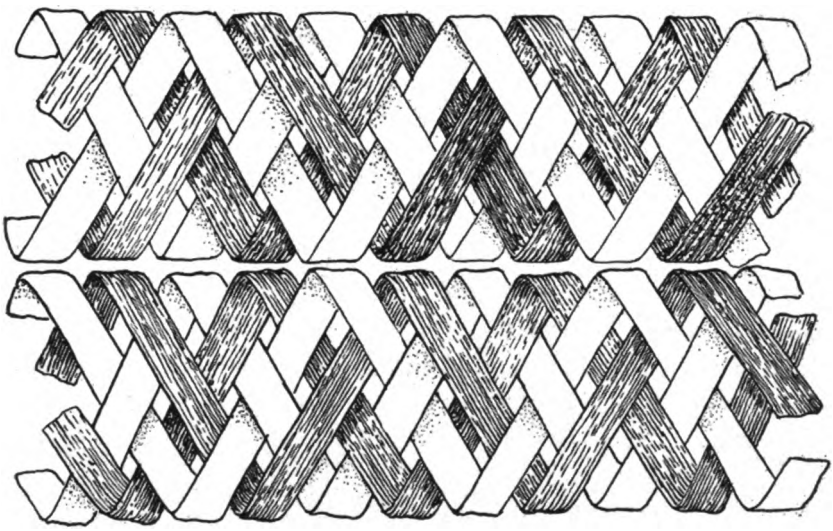

FIG. 14.—An intricate method of crossing and folding.

at each fold along the edges of the row, and splices are made in the usual manner. A section of a decorated snake-skin is shown in plate X. The design suggests the natural markings of the skin.

Other methods of covering large surfaces are shown in figures 15 and 17. In figure 15 is introduced a technique similar to the checker weave of basketry, consisting of two elements crossing each other at right angles, one over and one under. This form of decoration is found usually where rectangular or square areas are covered. The arrangement of the quills in this technique precludes

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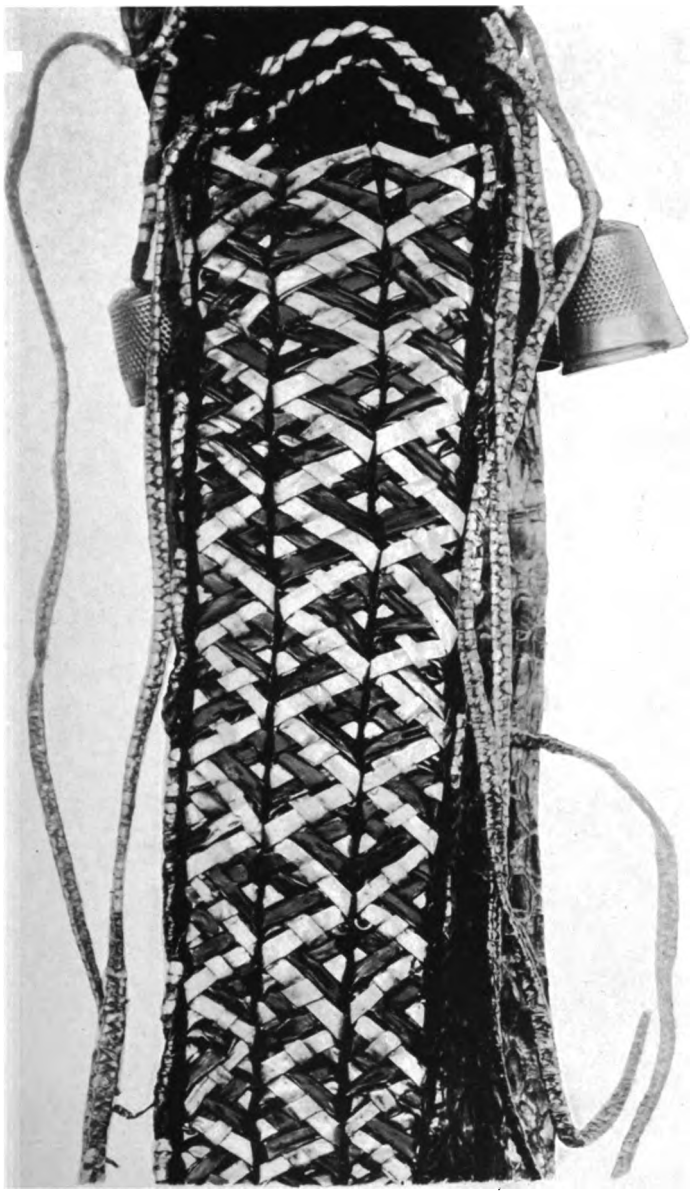

SECTION OF A QUILL-DECORATED SNAKE-SKIN FROM AN IOWA WAR-BUNDLE

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the possibility of working out designs to any extent; however, some attempt has been made by using quills of different colors. The quills are held in place by spot-stitches around the edges of the decorated area, where the ends of the quills are turned under, indicated by dotted lines in the drawing. Sometimes the width of

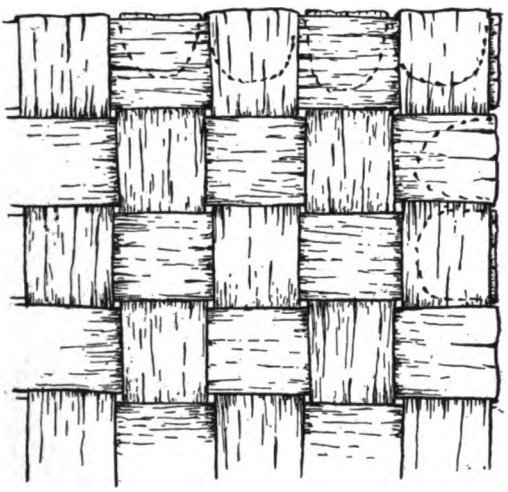

FIG. 15.—The "checker-weave" method of covering large surfaces.

the area has proved to be greater than the length of a quill; in such cases the ends and points of added quills are concealed under crossing elements. An example of this work is shown in plate XI. The specimen illustrated is a section of a decorated legging of Blackfoot origin.

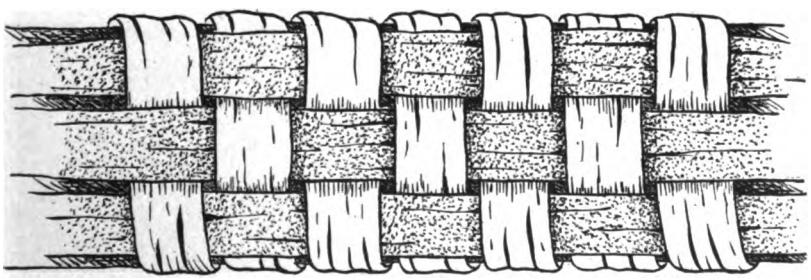

Fig. 16.—Another form of the "checker-weave."

A wrapping of the same technique is found on strips of rawhide about one-quarter of an inch in width (fig. 16). In this case no

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stitches are used to keep the quills in place; instead, the ends of the crossing elements are twisted together at the back of the rawhide strip, as shown in figure 6, while the ends of the quills laid lengthwise are held in place by wrappings of sinew at the extremities of the rawhide strip. Splicing is accomplished by overlapping the ends of the quills, which are secured and concealed by the crossing elements. The form of decoration here described has been applied to the entire length of an eagle-feather, fastened to the quill, and worn as a scalp ornament of Osage origin.

Figure 17 illustrates what may be called a plaiting, where two elements cross each other obliquely over and under, forming a

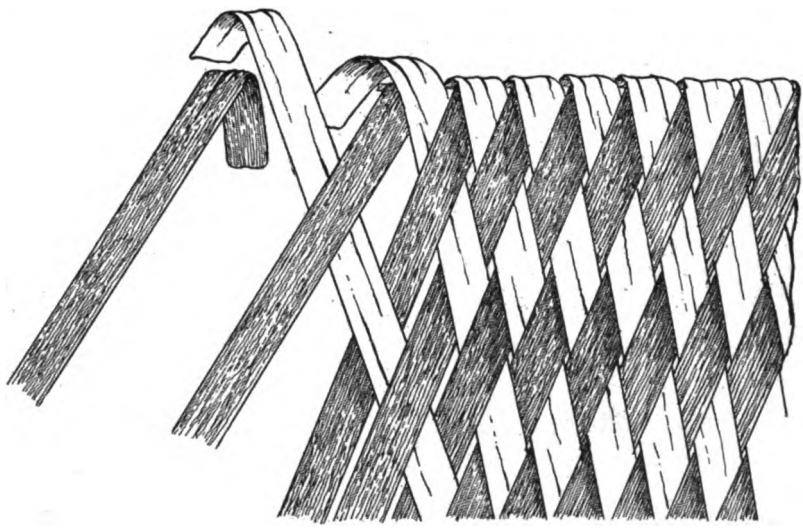

FIG. 17.—The plaiting method.

diamond-shaped pattern. The quills are held in position by spot-stitches around the edge, and, when necessary, across the decorated area where that is wider than the length of a quill. This technique has been found in broad patches (from seven to ten inches wide) on pipe-bags and baby-carriers. The same method of splicing as described in the preceding technique is employed.

Little opportunity is given for working out designs other than those that are strictly geometric. A very pleasing effect of this

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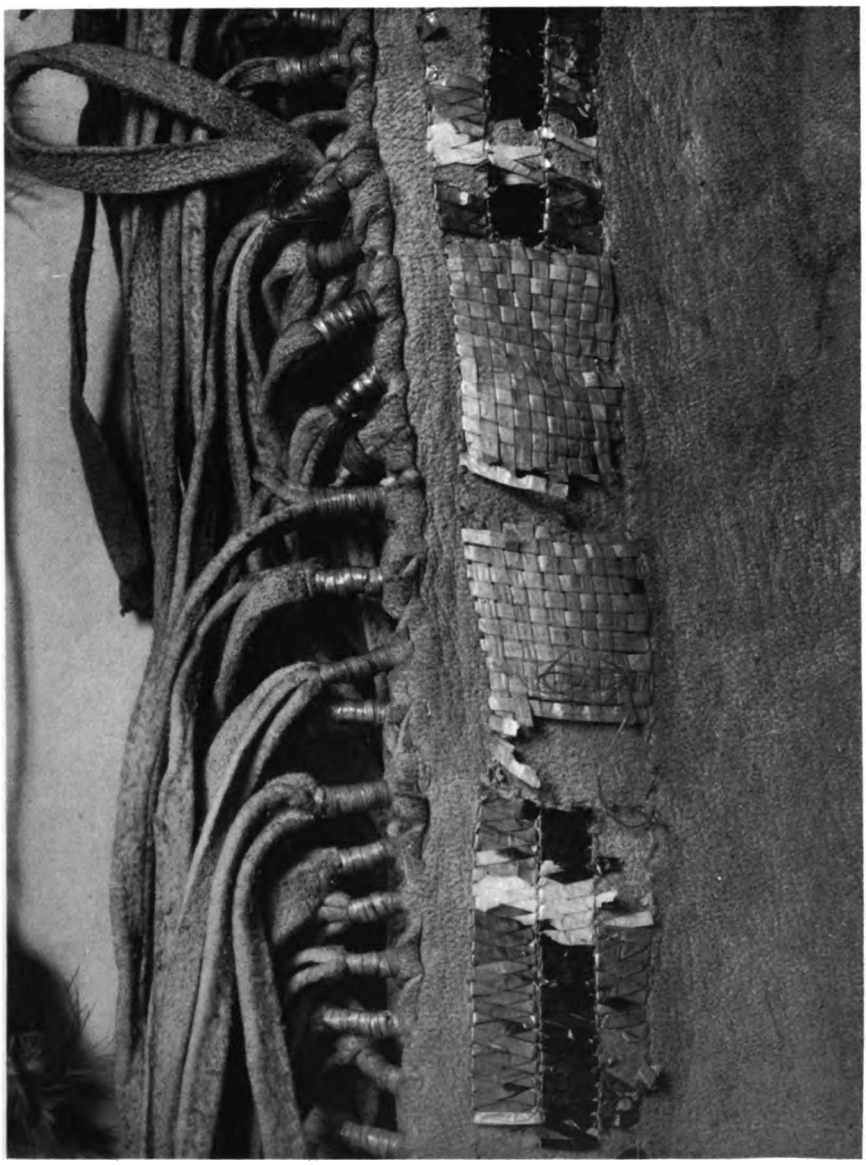

SECTION OF BLACKFOOT LEGGING

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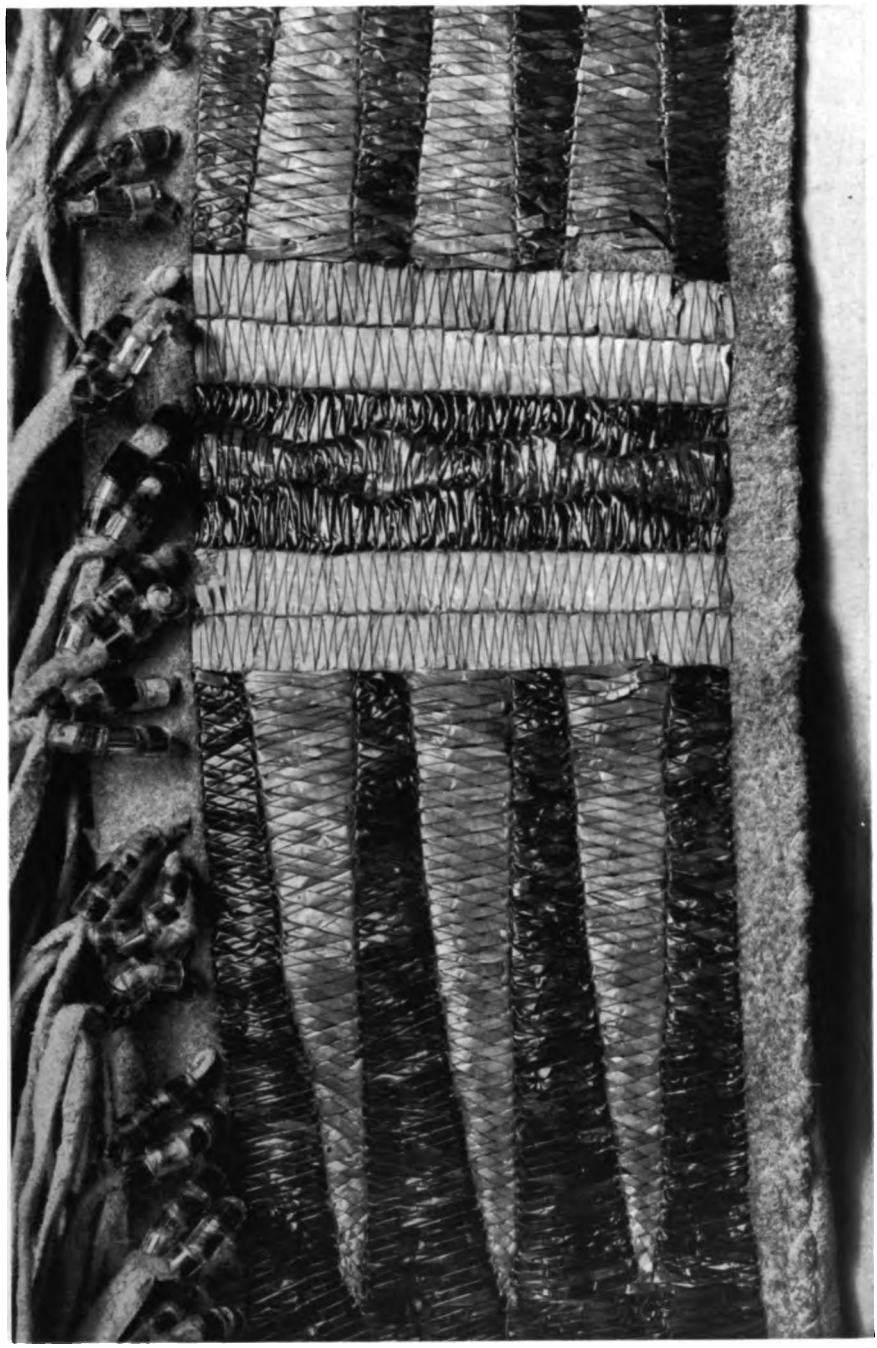

DECORATION ON A CHEYENNE SHIRT

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technique is produced by the working of narrow bands (fig. 18) side by side, an example of which may be seen on plate XI, above and below the checker weave on the section of Blackfoot legging. The drawing shows the use of two quills which are made to cross

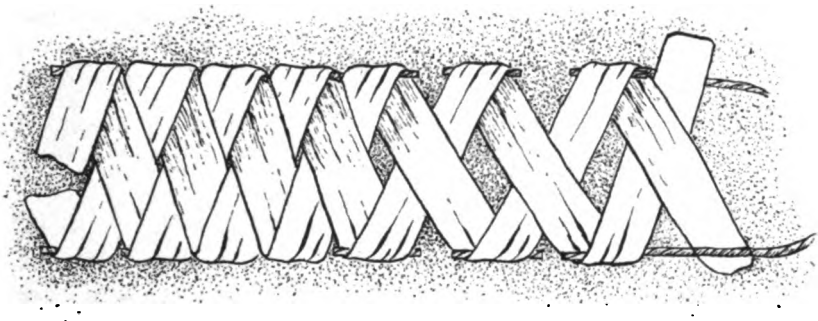

FIG. 18.—Technique produced by working narrow bands.

each other diagonally, forming a single diamond pattern in the center of the band. Figure 19 shows, by the addition of a third quill, how a double-diamond effect is produced. This is illustrated in the long, pointed pattern on plate XII.

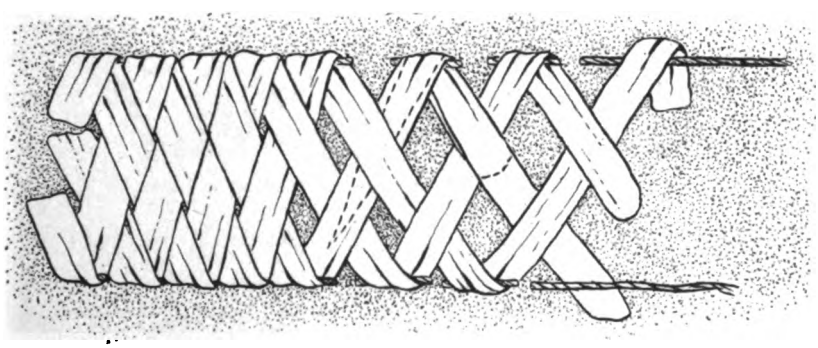

FIG. 19.—Double-diamond effect produced by the addition of a third quill.

An entirely different effect is produced in the appearance of a narrow band (fig. 18) by introducing quills of contrasting colors. For example, in figure 20 black and white quills are shown, with exactly the same folding as used in figure 18, resulting in black and white lines running diagonally across the band. This variation

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occurs frequently and unless closely examined has the appearance of being a different technique. Examples of it are shown in plate XVIII.

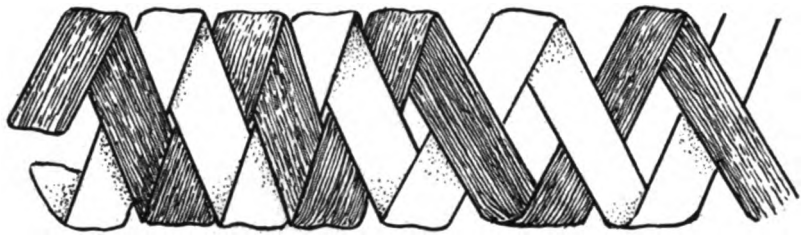

FIG. 20.—Effect produced by using black and white quills.

Figure 21 illustrates an unusual method employed for bringing together two quills of contrasting colors; in fact it is the only specimen I have found in which two quills have been used one on top of the other. A white quill is backed with a black one; then the two are worked along together and folded in such manner that first a white surface is exposed, then, crossed by another fold, a black surface is presented, the whole producing a sawtooth pattern.

FIG. 21.—Use of superimposed quills of contrasting colors.

This interesting technique occurs on a knife-sheath collected many years ago from the Delaware Indians; it was recently found in Europe, and has since been added to the collections of the Museum of the American Indian. The sheath is made of black tanned deerskin, and is profusely although rather crudely decorated with porcupine-quills. The specimen is shown on plate VII, *a*. The technique referred to may be seen at the top, on the broad part, behind the knife handle.

Figure 22 exhibits a method employed by the Tlingit to cover broad surfaces with porcupine-quills. The quills are laid length-

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wise, and side by side on the object to be decorated. Spot-stitches are concealed beneath the ends of the quills, which are turned under. At regular intervals a stitch is made across the surface of the quills. The first is caught into the leather under the quill on the outside edge of the band of decoration, then passed over the next quill and into the leather beneath the third quill, alternating across the entire width of the band. The second row of stitches is commenced by crossing the surface of the first quill, under the

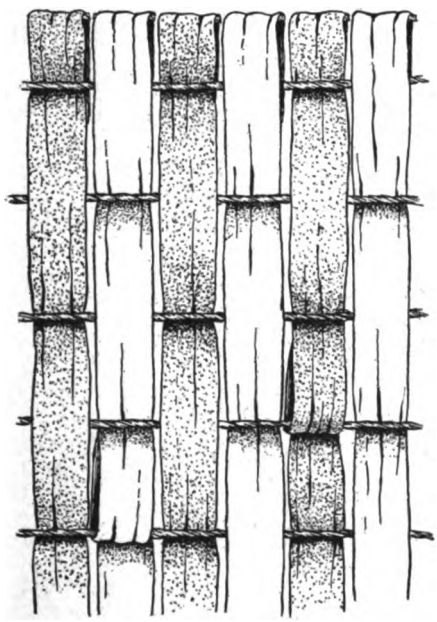

FIG. 22.—A Tlingit method of covering broad surfaces.

second, over the third, and so on. The splicing of additional quills is accomplished by turning the end of the nearly used quill under the nearest cross-stitch, and laying the end of the new quill under that stitch.

A head-band and several similar specimens are in the collections of the Field Museum, Chicago. The drawing (fig. 22) represents the work somewhat spread apart. A pleasing effect is produced by this technique, especially when quills of contrasting colors have been used.

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A form of weaving is introduced in figure 23. Attention must here be called to the fact that in the drawing the work is greatly spread apart to show clearly the direction taken by the component elements. The warp-strands are of twisted sinew or some vegetal fiber, the ends of which are knotted into the leather to be decorated. The flattened quills, which form the weft, are passed over and under the warp strands, each row of quills beginning with the same warp element as the row above it; that is to say, the rows do not alternate. If left in this condition the work would fall apart; therefore, to hold the weave together, another strand of sinew or fiber has been woven in between each row of quills, crossing the warp-strands over and under where the quills have crossed under

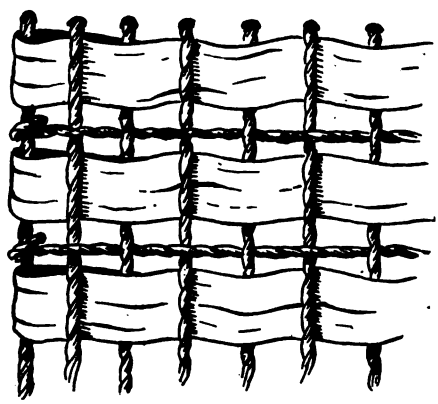

FIG. 23.—Mode of weaving with sinew warp-strands.

and over. The end of this added strand is knotted to the first warp element, and then at regular intervals spot-stitched into the leather. In this technique the elements are all drawn together so that the threads going in the same direction as the quills are seen only under very close examination.

A beautiful specimen of this work (pl. XIII) was collected in Alaska for the United States National Museum. The same technique is to be found on a deerskin garment of Athapascan origin in the Field Museum.

Still another method of covering broad surfaces with quillwork is shown in figure 24. Two strips of rawhide are laid parallel

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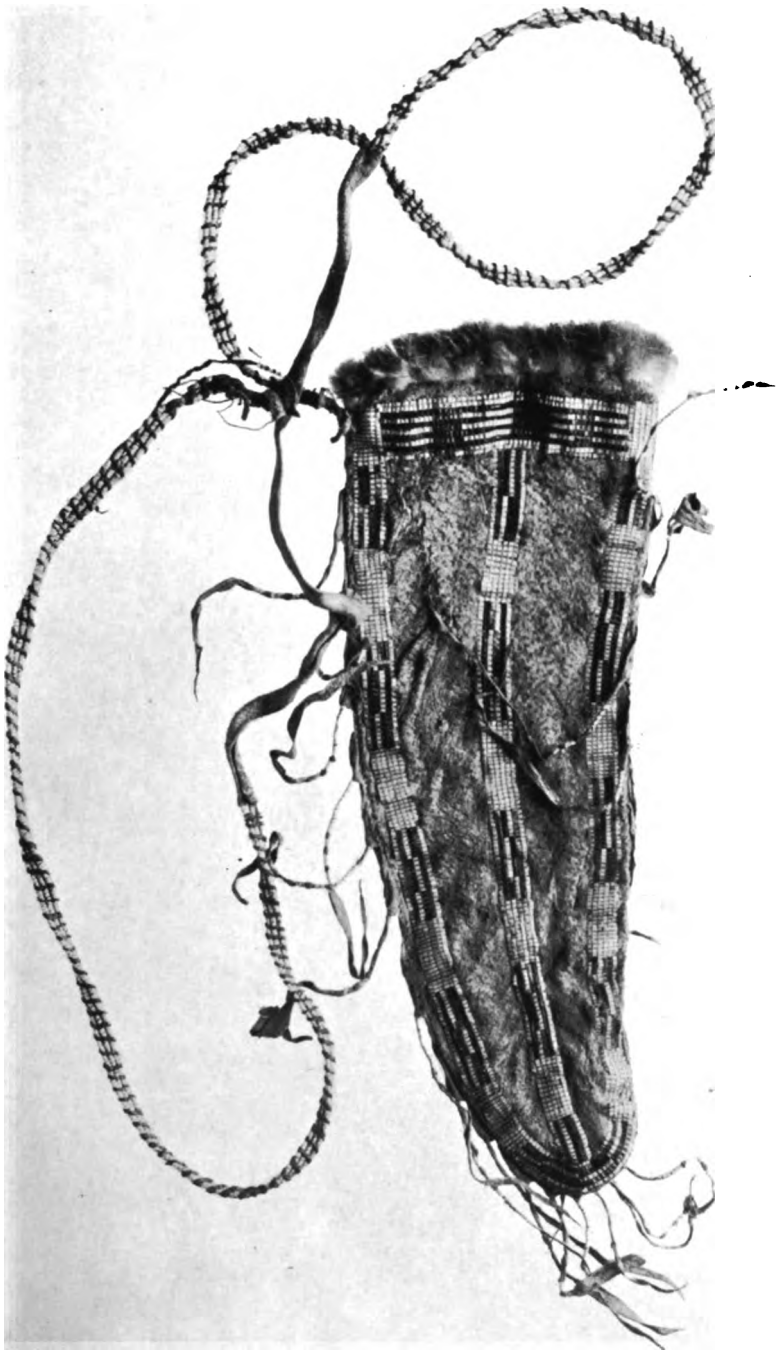

KNIFE-SHEATH FROM SOUTHERN ALASKA

UNITED STATES NATIONAL MUSEUM

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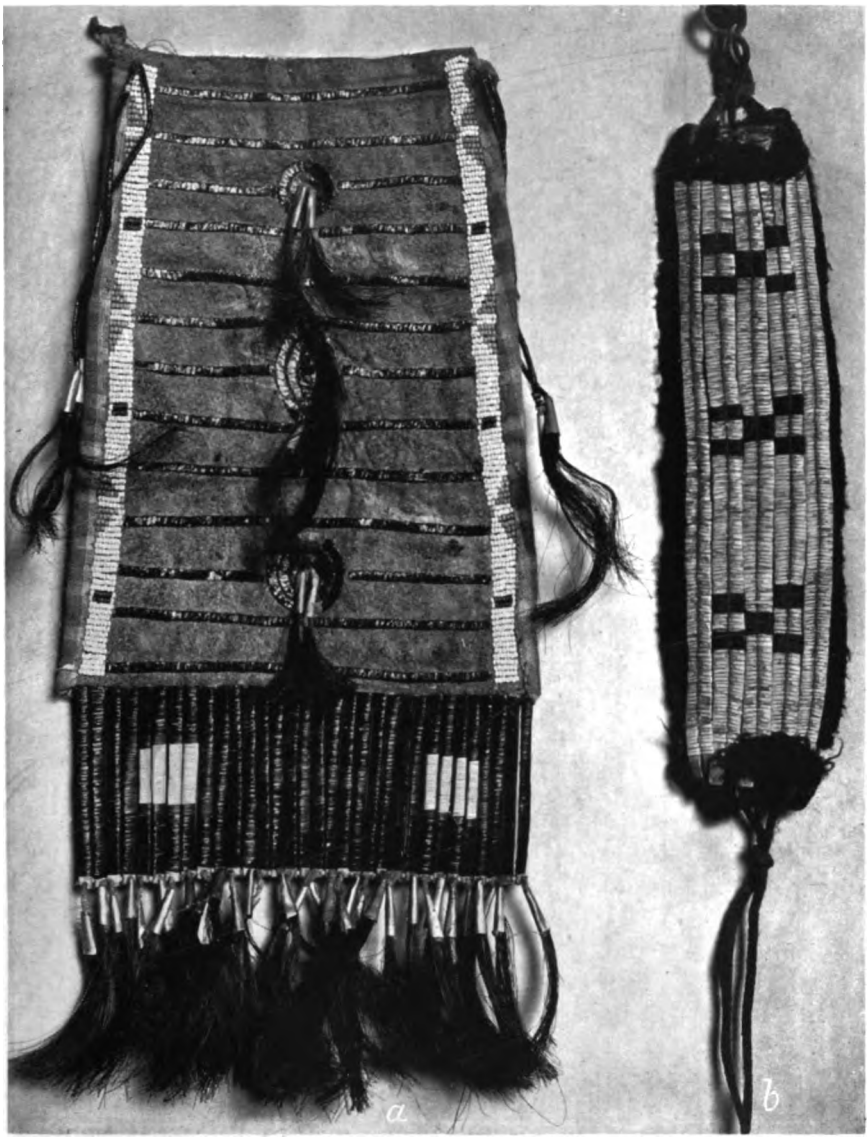

SIOUX ORNAMENT HOPI ANKLET

MUSEUM OF THE AMERICAN INDIAN

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and wrapped with flattened quills, which are held in position by a twisted sinew thread passing alternately over and under the quills, between the rawhide strips. The quills, having been softened by moisture, are easily crowded together by drawing the thread tight, thus forming a compact wrapping, entirely concealing the rawhide strips. Various widths are found, ranging from about one-quarter to five-eighths of an inch. Such strips are laid side by side and

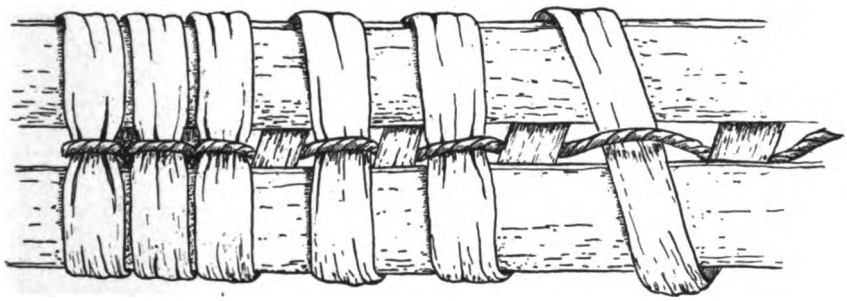

FIG. 24.—Quill-work on rawhide strips for covering broad surfaces.

sewed to the article to be decorated by passing stitches through the loops of the quills on the under side of the strips. The number of strips used and also the length are governed by the size of the area to be decorated. This technique has been made use of by the Tlingit and by some neighboring tribes, but not to a great extent.

Some attempt has been made to introduce designs by changing the color of the quills at measured intervals.

With variation, specimens of this technique have been collected from some of the Pueblo Indians, the difference being in the use of two threads instead of one to bind the quills to the rawhide strips. Figure 25 shows the two threads with a twist between each loop of the quills; in other respects the work is carried out just as it is by the Indians of the northwest coast. Plate XIV, *b*, illustrating an anklet made by the Hopi of Arizona, shows the method of working out designs. The difference in the work of such widely separated peoples can be detected only after very close examination. The usual method of splicing and of supplying additional quills has been observed in this technique.

Plate XV illustrates a highly ornamented circular form of decora-

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tion. Such discs of quill-work are found on buffalo-robes, medicine-bags, etc., and have occurred as tipi ornaments, in which latter case they have been made detachable, not sewed directly to the material of which the tipi-cover was made. The specimen illustrated was to all appearances originally made for a tipi ornament and was subsequently used to decorate a medicine-bag. It may be seen that the quill-work is sewed to an independent piece of deerskin, and then sewed to the bag over some bead-work. Plate XX shows this form of decoration sewed to a quiver. The technique may be called a wrapped coil, but the coils are not sewed together as in the case of coiled basketry. The filler, or foundation, of the coil is composed of horse-hair in modern work, but in one or two

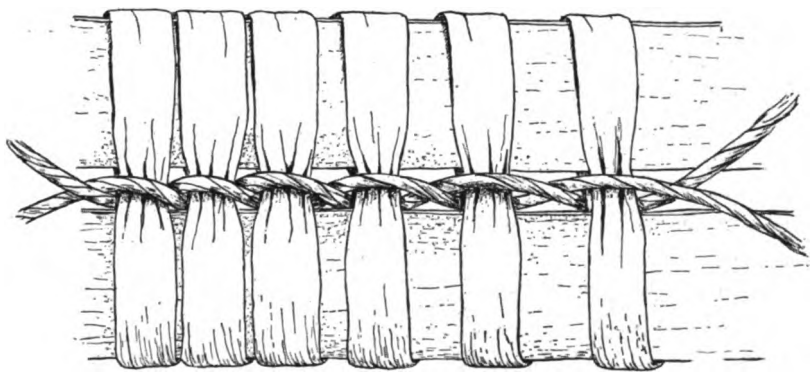

FIG. 25.—The use of two threads for binding the quills.

very old specimens examined the filling has the appearance of human hair, and in others the long hair from a buffalo-tail. A hank of hair of sufficient size to form a coil of the required diameter is wrapped with moistened and flattened quills as shown in figure 26, and through alternate loops of the quills, stitches are carried into the leather forming the base or groundwork of the decoration. It is very evident that the wrapping, coiling, and sewing were manipulated together, especially where a design has been introduced, otherwise the alignment of the pattern would be imperfect.

A buffalo-robe of Blackfoot origin in the Museum of the American Indian has been decorated with four discs of this technique,

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DECORATION ON AN OTO MEDICINE-BAG

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and in addition to various colored quills to produce a design, wrappings of black horse-hair and a fine cord made from vegetal

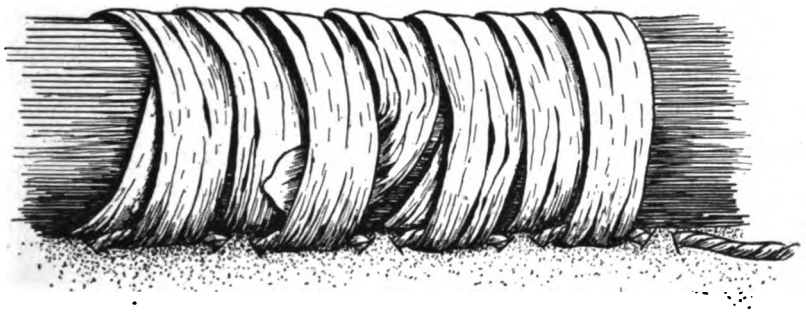

FIG. 26.—Quill-work on a coil of hair.

fiber have been employed, probably to give a touch of variety to the ornamentation. Another form of wrapped filler decoration is shown in figure 27, the general appearance of the ornamentation of which would suggest the same technique as described for figure 26. There is, however, a wide difference in the manipulation of the materials used. Instead of one hank of hair, two are employed. The quills are wrapped around both hanks, and, as the wrapping proceeds, stitches are made over the quills, between the rows and into the object being decorated. The stitches are drawn so tightly that they are entirely concealed. This technique has been used in the form of broad bands, eight or ten or even more being laid lengthwise side by side, serving as shoulder-straps reaching to the waist-line on a deerskin shirt, also as bands on the sides of leggings. So far this technique has not been found in any form other than straight lines. Specimens of this technique have been collected from the Sioux, Nez Percés, and Mandan.

FIG. 27.—Another form of wrapped filler decoration.

Pipe-stems, club-handles, and occasionally horn spoon-handles

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have received their share of attention so far as ornamentation is concerned. Various methods have been employed for that purpose. The most simple manner of fastening porcupine-quills to a rounded stick, such as a pipe-stem, was recently brought to light by Dr F. G. Speck while conducting ethnological investigations among the Penobscot Indians of Maine. An old woman of that tribe was induced to make a specimen of quill-work, other than that on birch-bark, which she remembered from childhood. The specimen produced, without any aid in the way of suggestion, was the pipe-stem shown on plate XVI, *d*. The back or under side of the stem is seen in the illustration; the front, of course, presents a series of

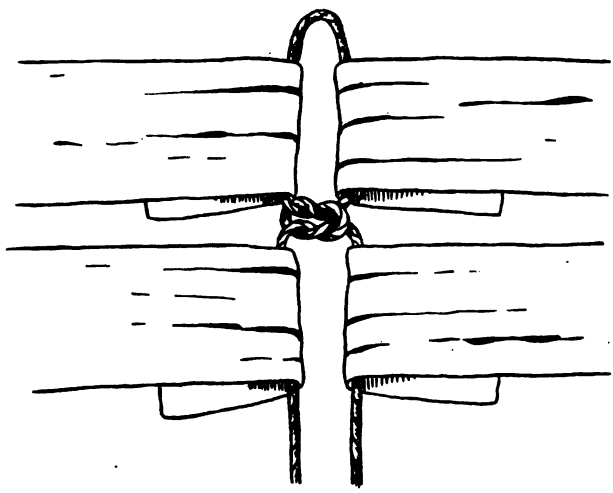

FIG. 28.—Method of fastening quills to a pipe-stem.

unbroken wrappings. The quills are wrapped around the pipe-stem once; the ends are turned under where they meet at the back of the stem and are held by a cord passing through each of those under-turned ends, and the cord is tied between each wrapping. Figure 28 illustrates the method of fastening the quills to the pipe-stem. Pipe-stems with similar wrappings have been collected among the Plains Indians and also from Woodland tribes, but the handling of the fastening cord in most cases has been different.

Figure 29 shows a rather complicated method of tying. The

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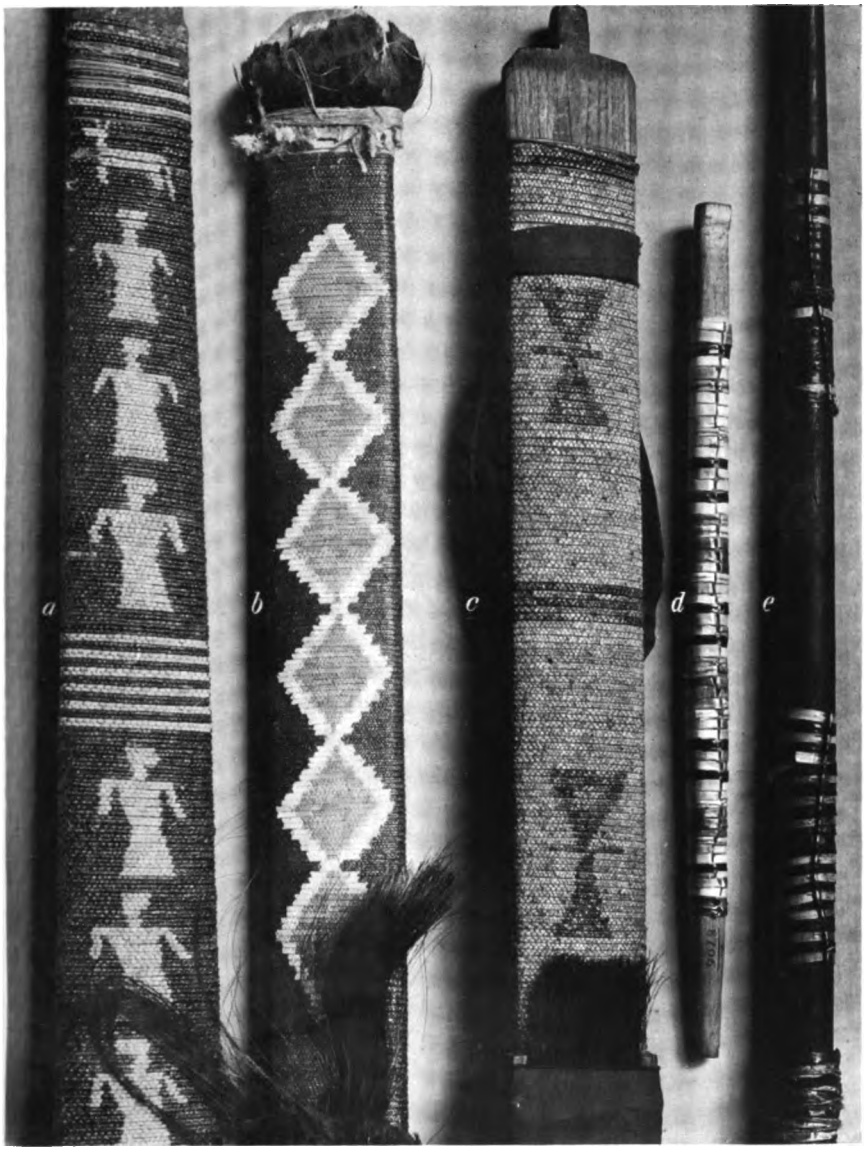

PIPE-STEMS

a, Sioux; *b*, Kansa; *c*, Sioux; *d*, Penobscot; *e*, Of unknown origin

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drawing perhaps will suffice without further description. In connection with this method a channel was cut lengthwise of the stem into which the cord was sunk, giving to the work a very neat finish.

Plate XVI, *e*, illustrates another wrapped pipe-stem, and figure 30 shows the manner of tying. In this case the ends of the quills are not turned under, but are laid over a large cord running lengthwise of the stem; a finer cord is doubled and looped under the large cord; a fine thread is passed under the larger one and is made to cross over the ends of the quills on each side of the large cord. Between the wrappings the fine thread crosses itself under the large cord before passing over the next wrapping. After the last quill is fastened, the loose ends of the fine cord are tied and the knot crowded under the last quill, out of sight. The ends of the quills are cut off close to the binding string.

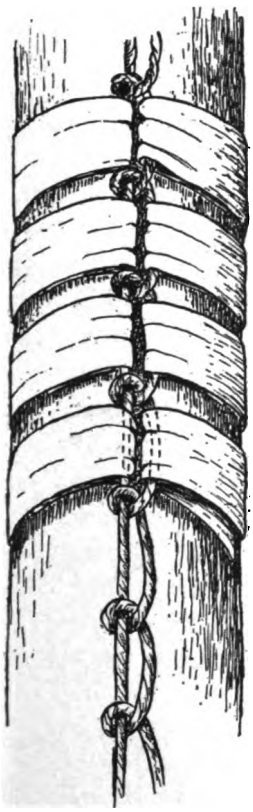

FIG. 29.—Method of tying quills to a pipe-stem.

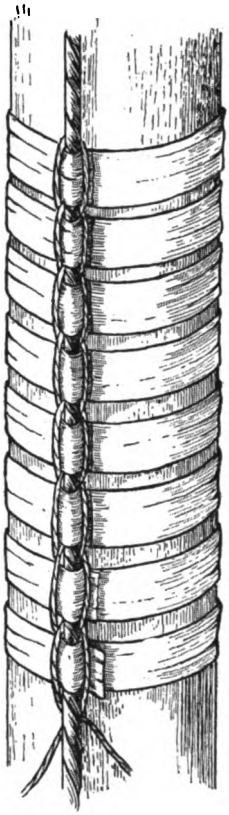

FIG. 30.—Method of tying quills to a pipe-stem.

In connection with this form of wrapping, figure 31 indicates still another method of securing the quills. This decoration was found on the legs of an otter-skin which had been made into a medicine-bag collected among the Iowa Indians. At the beginning and finish of the work the cord was knotted and the knots con-

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cealed under the quills. A similar decoration, with the same fastening, is found on a cord called a "slave tier," of Winnebago origin, made of twisted buffalo-hair covered with soft-tanned deerskin and wrapped with porcupine-quills.

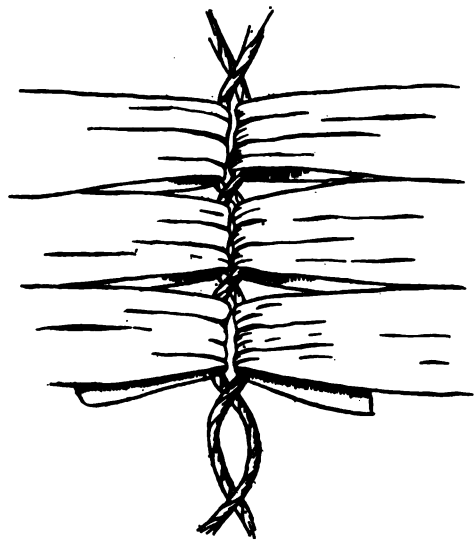

FIG. 31.—Method of securing the quills.

A very elaborate and complex, and the most common of all forms of decorations for pipe-stems, is shown in plate XVI, *a*, *b*, *c*. Beautiful effects are produced in this technique, and our illustration does not do justice to this particular branch of the art of porcupine-quill work. The wrapping in this case may properly be called a plaited band, composed of two strings made of twisted sinew over which porcupine-quills are braided in the manner shown in figure 32. The drawing represents the use of one quill in this braid, while reference to

FIG. 32.—A plaited band of wrapping, one quill being used.

figure 33 will show the use of two quills. Both techniques are found on pipe-stems, etc., but that with one quill is by far the commoner.

From personal observation it has been found that the method employed by modern quill-workers (and there is no reason to suppose the earlier artists made use of any other) is to prepare two

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long sinew threads without knots, which is done by twisting strands of sinew together just as ordinary string or twine is made. These strings must be of sufficient length to complete the decoration. Knots or an uneven surface are apt to mar the neatness of the work.

The quill-worker, seated on the ground, with legs extended, makes two or three turns of the threads around the pipe-stem, or the first turn is overlapped by the succeeding ones for security. The threads not in immediate use are wrapped around a small stick, which is thrust into the opening of the worker's moccasin or is stuck into the ground directly in front of her, for the purpose of keeping the strings tight as the work progresses. Then with

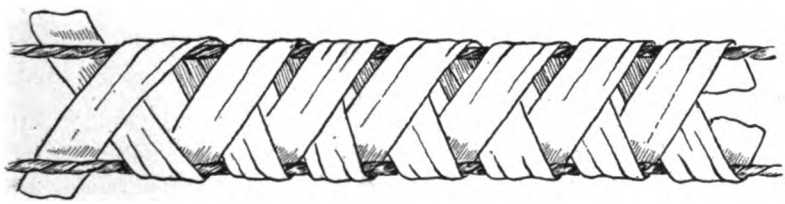

FIG. 33.—A plaited band of wrapping, with two quills.

the pipe-stem, or other object, held at a right angle to the direction in which the strings are stretched, the quills are worked over and under the strings as the drawing indicates. When a sufficient length has been plaited, it is wrapped around the object, at the same time covering the first wrappings of the sinew thread. Two or three turns of the threads on the small stick are taken off and the plaiting proceeds. When a pattern is to be introduced, quills of various colors are inserted at intervals, the distance being determined by laying the braid on the pipe-stem, and the position on the strings noted where the change of color is to take place. The lines of the plaiting may be easily followed in the illustration, which shows the introduction of quills of contrasting colors in their correct positions to produce the design. Some of these braids—the product of early workers—measure only one-sixteenth of an inch in width; modern work is rarely so fine, often measuring an eighth of an inch or more in width.

For a secure finish, the ends of the sinew threads are tucked

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under the last few wrappings of the braid. Splicing is performed in the manner elsewhere described. Modern workers make use of commercial thread in place of sinew.

In connection with this technique, mention should be made of a head-band in the Museum of the American Indian, the work of the Karok of California, consisting of a string of plaiting about twelve feet long and three thirty-seconds of an inch wide, simply coiled. The plaiting shows practically the same treatment of the quills as is to be found on pipe-stem decorations, except that, where additional quills have been inserted, instead of the usual method of lapping, the end of the added quill has been passed under one of the sinew threads, between the last turn of the used quill (fig. 34); the end of the used quill is in like manner held by the turns of the added quill. As the plaiting proceeded, the quills were brought together tight and close so that the ends could not work loose. The ends were turned in one direction, that is, toward the back of the braid, and were cut off so that they are hardly visible.

FIG. 34. — Method employed in a long string of plaiting.

In a similar braid, from the Ojibwa of Manitoulin island, the securing of additional quills was accomplished by telescoping (see fig. 7).

Figure 35 represents a purely woven technique in which sewing is not resorted to at all in the work, except when the weave is finished, when it is sewed to a strap of leather for use as an arm-band or a head-dress, or some other object to be decorated. For convenience, in the drawing three warp strands (*a*) are shown lengthwise of the weave, and two rows of quills, which perhaps are sufficient to illustrate the method employed in this interesting technique. Under ordinary circumstances many more warp strands are used in making up such a piece of work. For

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QUILL-DECORATED ARM-BAND
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instance, examination of the specimen illustrated on plate XVII discloses the use of twenty such strands, which may be considered rather the minimum than otherwise. This specimen is about one and one-quarter inches wide. Sometimes bands of this work are several inches in width.

The process of weaving consists first of making the warp strands of either sinew or vegetal fiber, which are stretched side by side their entire length on a bow, much as a bow-string would be strung. To keep the warp strands spread apart the desired width, two pieces of thick, leathery birch-bark are perforated with a straight row of small holes corresponding in number with the number of strands to be used, and the distance between the perforations corresponding

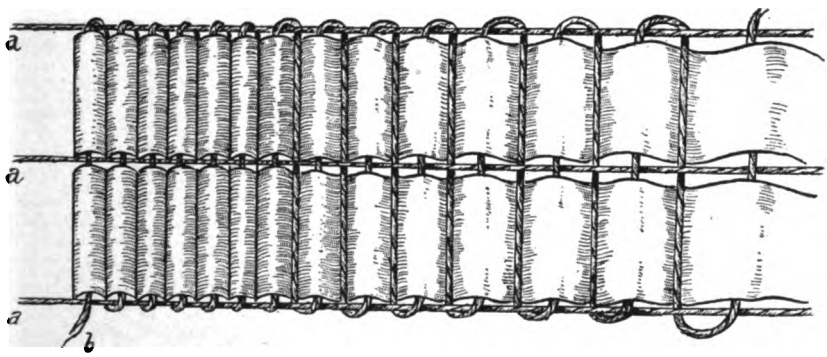

FIG. 35.—Woven technique, without sewing.

with the width of a flattened porcupine-quill. A piece of bark so prepared is placed at each extremity of the warp elements, with a strand running through each perforation. At this stage the loom is set ready for the weaving operation.

Several attempts have been made to secure a loom set up for this technique, but the best result obtainable in this direction is a piece of unfinished work with the birch-bark ends still in position, and a native description of the manner in which the warp strands were stretched on a bow, from which the illustration (fig. 36) was made. In figure 35 the warp strands are marked *a*; another strand, marked *b*, which may be included among the weft elements, is attached to the outside warp strand and then made to pass alter-

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nately over and under the warp to the opposite side where it turns and crosses over again, passing under those strands which it crossed over during the previous movement. This operation is repeated to completion. Meanwhile, porcupine-quills have been woven in between the warp strands, over and under the crossing elements.

As the work proceeds the quills are crowded together, so much so that the crossing strands are hidden between the corrugations; in fact, the only strands showing in a finished piece of work are the two on the outer edges, and the loops of the crossing strands, which together form a selvage edge.

As the length of a quill becomes exhausted, the end is allowed to protrude at the back of the work; another quill is inserted with its end in the same position, then the crossing cord *b* is driven tight against the two ends, and the weaving is continued. The quills are used in a moistened, pliable condition; when they become dry, they are stiff and hard, and do not break away from such a fastening. After the work is finished the protruding ends are cut off close to the weave.

In the unfinished specimen of this work, the piece of bark at the lower end of the loom (fig. 36) slides freely up and down the warp strands, suggesting its use as a weave-sword to drive the quills up tight and insure a straight line across the weave. From the accuracy with which the quills are lined across the weave it is evident some implement must have been used to bring about the exquisite

FIG. 36.—Quill-work in process—the warp strands stretched on a bow used as a loom.

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finish so noticeable in this work. From a mechanical point of view the piece of bark referred to is an ingenious adaptation if we assume that it was used both as a spreader for the warp strands and as a weave-sword.

This form of decoration has the appearance of being composed of fine, cylindrical beads. Specimens have been collected from the northern Athapascan tribes, the Indians of the Great Lakes, and the Iroquois. Owing to the technique, the designs are angular. However, some very striking patterns have been produced, especially worthy of notice being that illustrated in the frontispiece, in which the harmonious blending of colors is typical of porcupine-quill work generally.

The greater part of the detail of the art of porcupine-quill work thus far described is of such a nature that the designs are inclined to angular patterns, due no doubt to the methods employed and in some measure to the fact that many of the specimens examined were collected from Indians of the Plains, whose art seems to have been more or less influenced by their environment—with the ever-present cone-shaped tipi, perhaps the distant mountain peaks, the trails, and other objects suggesting straight lines, all of which were more or less conventionalized in their designs.

Geometrical designs, however, are not uncommon in the work of the Woodland Indians; but the art of these people to some extent indicates a tendency toward designs suggesting plant life, the absence of which is noticeable in the art of the Plains tribes. Thus may the question of environment be considered also in the art of the Woodland people.

Tendrils, stems, branches, leaves, and flowers are represented sometimes in realistic fashion. The graceful curves of nature are reproduced with remarkable skill in most exquisite line-work, involving many intricate foldings of the quills and seemingly impossible stitches, especially when we consider the fact that the most primitive tools were used—an awl, perhaps made of bone or simply a thorn, and for a needle the stiffened end of a sinew thread.

A number of methods of folding the quills have been employed by the Woodland Indians in representing plant life that were not

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used by the people of the Plains, whose style of art consisted mainly of covering extensive surfaces, that is, patterns with a solid background of quills.

Plate XVIII illustrates an entirely different style. An exquisite floral design has been worked, leaving the leather to form a background. Conventionality has not been carried so far as to obscure

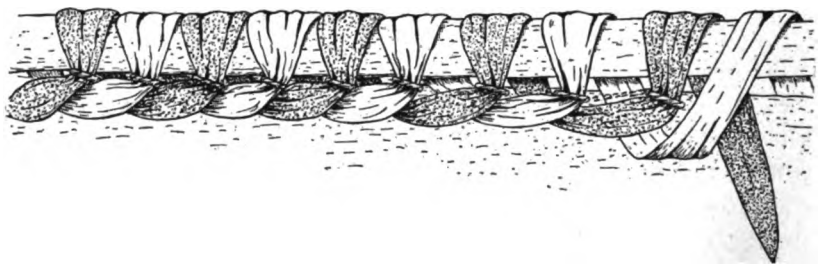

FIG. 37.—Use of two quills of contrasting colors on a lace of deerskin.

the artist's intention of faithfully representing leaves and flowers with their stems and gracefully curving tendrils. The specimen referred to is one of many collected years ago, but either the record of it has been lost or none was made, so that its origin is not certainly known; but after comparison with readily identifiable modern work, there is every reason to believe that this choice piece of porcupine-quill embroidery is of Iroquois origin. There are

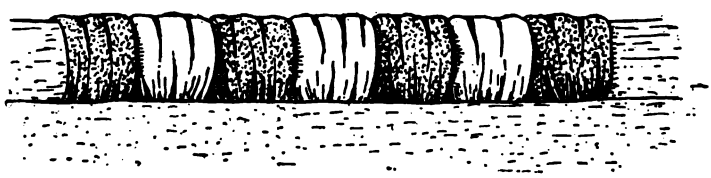

FIG. 38.—Reverse of the edging shown in figure 37.

several techniques in this specimen which are not found in the work produced by the Indians of the Plains. The edges of the pouch and shoulder-straps (the straps are not shown in the illustration) are embellished with a very ornamental technique consisting of a series of quills wrapped over a filler and sewed to the edges. Figure 37 illustrates the use of two quills, one overlapping

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QUILLED POUCH, PROBABLY IROQUOIS

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the other, of contrasting colors, which have been turned over a lace of soft deerskin forming a filler. Stitches have been made over each quill, as may be seen in the drawing. Figure 38 illustrates the reverse view of this edging, which at first glance has very much the appearance of beadwork along the edges of the object.

In figure 39, instead of two quills, one has been used. The drawing shows the method of folding and the direction of the stitches,

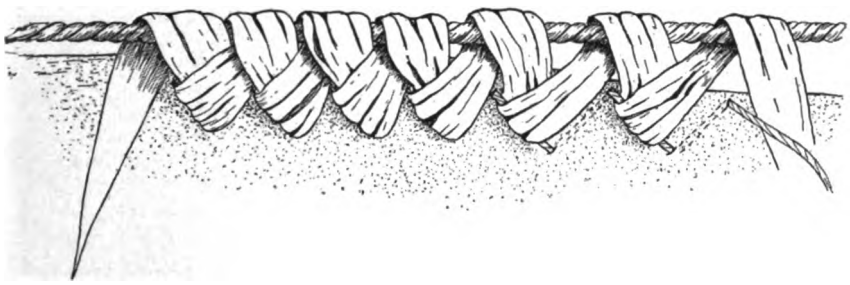

FIG. 39.—Method of folding a single quill on a cord of sinew or vegetal fiber.

also that a cord of sinew or perhaps of vegetal fiber has been used instead of a deerskin lace.

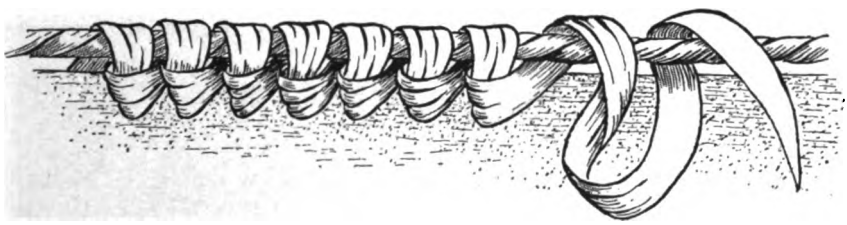

FIG. 40.—Another method of folding the quill for edging.

Figure 40 illustrates an entirely different fold of the quill, but the stitches are carried over the lower turns of the quills as shown in figure 39.

Figure 41 represents a single-quill edge with a fold similar to that shown in figure 37, but the treatment of the stitches is different, each stitch being made to cross the quill in two places instead of one, thus changing the appearance of the edging.

There is a possibility that the two methods last mentioned express the individuality of the makers, as they occur but once in

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all the specimens examined. Unfortunately the provenience of the specimens is unknown, but the general character of the design suggests the art of eastern Indians, probably the Iroquois.

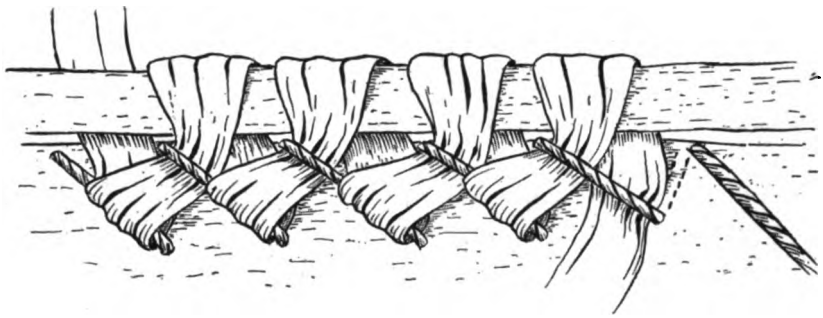

FIG. 41.—A single-quill edge with change in treatment of the stitching.

Another variation of a single-quill edging in conjunction with a cord filler is shown in figure 42. The simple foldings and stitches are clearly shown in the drawing, therefore further description is unnecessary. This edging appears on a specimen collected from the Iowa tribe. It is a very old piece, and as the edging is the only one showing this particular folding, the treatment may be placed in the individual class. This statement as to individuality must

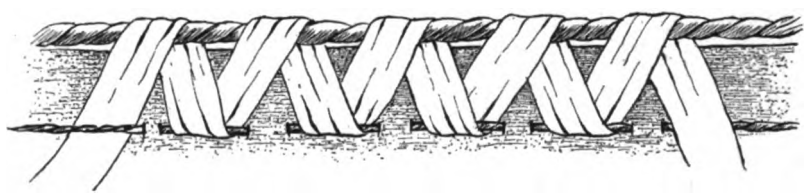

FIG. 42.—Variation in single-quill edging with a cord filler.

not be accepted as positive, as no doubt there are many specimens of quill-work that as yet are not accessible for examination.

An attractive edging is represented in figure 43. The quills have been folded in such manner as to form a sawtooth pattern, with the points of the teeth turned away from the edge. Stitches have been passed through the loops of the turnings, into the surface of the leather and out at the extreme edge. The edgings described are all made up of very fine quills and small stitches, and the work

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is drawn so close together that the stitches are hidden, except in that edge shown in figure 41; but the sewing is so fine and tightly drawn in this case that it is barely visible. These fine edgings are not found on modern work, for although some attempts to approach it have been made, the results are coarse and ragged, and do not possess that fine finish so characteristic of the old work.

FIG. 43.—Quill edging of sawtooth pattern.

Another method of decorating an edge is shown in figure 44. Here the quills have been folded over the edge of the leather from front to back, both sides having the same appearance. Spot-stitches have been carried entirely through, catching first one side, then the other. This technique has not only been applied to deer-

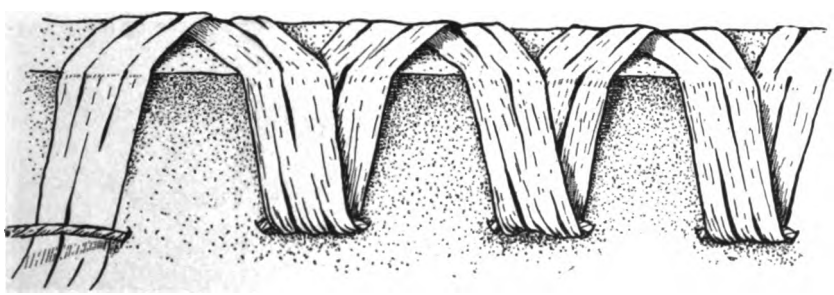

FIG. 44.—Edging produced by folding the quills from front to back.

skin, but frequently appears on intestine containers for quills, an illustration of which may be seen on plate IV. This specimen has been decorated at both ends.

An examination of the detail of the work illustrated on plate XVIII will show that the leaves and flowers have been outlined with

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a fine, hair-like line. Figure 45 depicts the method employed. The quill is flattened and twisted in such manner that a stitch is made between each turn of the quill; the thread is caught into the leather under the upper, and passes over the lower turn, entirely

FIG. 45.—Detail of the method of outlining shown on Plate XVIII.

concealing the sewing. A line so made can either be turned in an unbroken curve or made straight to conform to the artist's desire. Such lines occur so small and fine that it is almost incredible they could have been made without the use of a fine needle and thread.

FIG. 46.—A simple form of line-work.

A simple but crude form of line-work is shown in figure 46. In this case the quill has been simply laid on the article to be decorated and sewed over and over.

FIG. 47.—A form of folding with diagonal stitching.

Figure 47 represents the same folding as is seen in figure 45, but with diagonal stitching instead of a series of stitches made in the same direction as the line.

Figure 48 illustrates a method of making a raised line. The quills have been wrapped around a sinew cord, or perhaps a split bird-quill, and sewed to the decoration by passing the stitches through the loops formed by the quills as they were wrapped around

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the filler. A variation of this is shown in figure 49, in which, in addition to the bird-quill filler, a string or small cord is included

FIG. 48.—Method of making a raised line by wrapping around a core of sinew or of split bird-quill.

and the stitches are made over that, instead of through the loops of the quills.

These raised lines are rather striking in effect and are found frequently around the outer edge of a panel of some floral design, but not as a fine line around the edges of leaves, etc. Because these lines have a filler, it must not be thought that they are at all

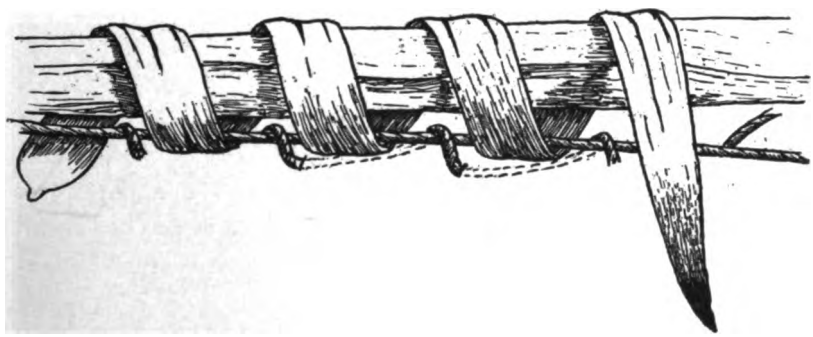

FIG. 49.—Method of making a raised line with a string in addition to the usual filler.

coarse, as some have been measured that are only a sixteenth of an inch in diameter.

Another raised-line effect appears on a game-bag decorated by the Loucheux. The folding of the quills is similar to that shown in

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figure 21 and also like the pipe-stem braid in figure 32. In the Loucheux work a cord has been laid under the quills between the stitches (fig. 50), producing a very neat, rounded appearance to the line. This specimen of line-work is one-eighth of an inch wide.

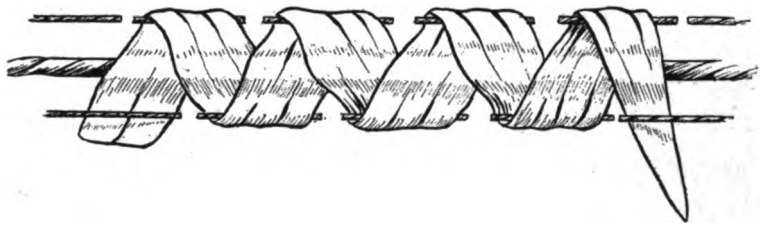

FIG. 50.—Raised-line work, a cord being laid under the quills.

The beautifully curved tendrils illustrated on plate XVIII are made with a complex folding of the quills, producing what may be called a double serrate line. Figure 51 illustrates the direction of the folds of the quills, and also the position of the stitches. The

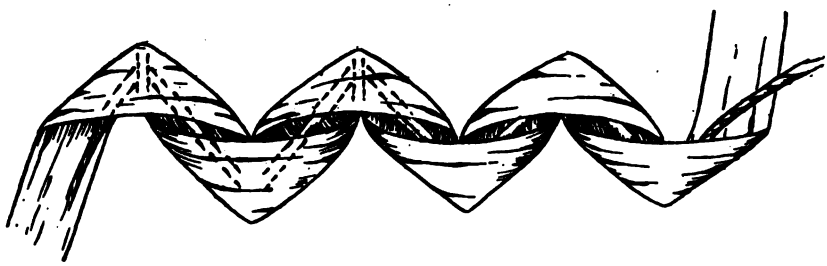

FIG. 51.—Detail of the folding shown in Plate XVIII.

dotted lines indicate the stitches following the shape of the teeth and the points at which they enter the leather under the apex of each turn.

FIG. 52.—A variation of the folding shown in Figure 51.

A variation is shown in figure 52, in which case the sewing is carried straight along the line, although the folding is the same as

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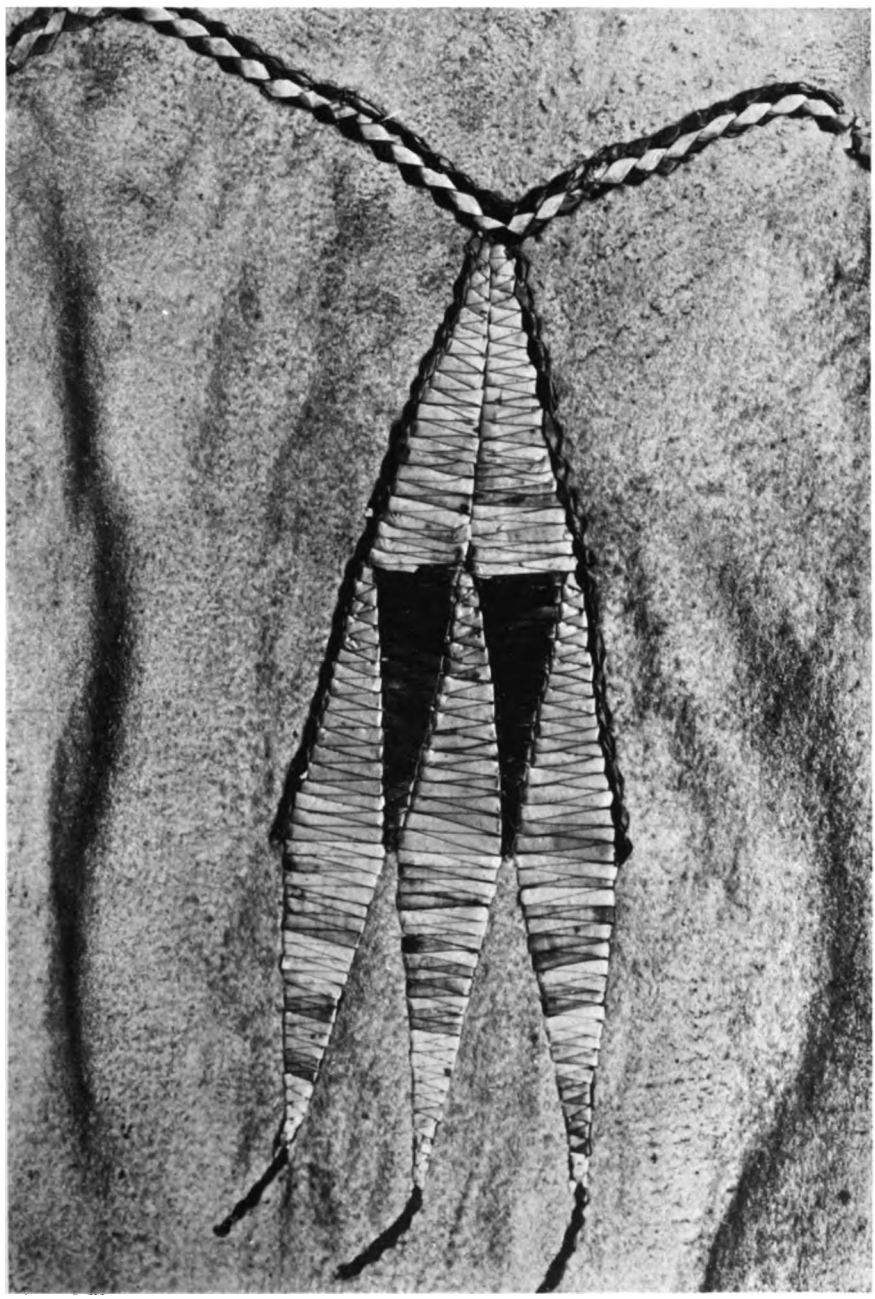

DECORATION ON A GROS VENTRE PIPE-BAG

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in the last example. It will be observed that the thread is caught into the leather between the points. In both instances, however, the work is done so neatly and is drawn so tightly that the sewing is entirely concealed. This technique has been observed in many specimens of the older work. Several pieces of modern work presenting the same technique have come to notice, but the fine finish of the early artists is lacking.

An interesting bit of line-work was found on a pipe-bag collected from the Cheyenne; it has the appearance of a very fine, single-link chain, and is made of quills with points and ends cut off and laid in loops crossing at regular intervals, and stitched over the crossings (fig. 53). Little or no attempt has been made to conceal the cut ends of the quills; nevertheless the work is so fine that this defect is hardly noticeable. The sewing is not hidden, but its exposure rather adds to the decorative effect than otherwise. The links are about one-eighth of an inch wide. This is the only piece of this technique that has come to notice, and it may be another expression of individuality.

FIG. 53.—Line-work on a Cheyenne pipe-bag.

A very neat line has been embroidered on several specimens in the Catlin collection, of unknown tribal origin, and reappears on a modern piece of work by the Gros Ventres (pl. XIX). The line crossing the upper end of the plate is the one referred to. The illustration shows three rows of quills. The technique of the top row has been described, and is illustrated in figure 45. The two lower rows are of an entirely different technique. In making this line two quills of contrasting colors have been used, and so folded as to form a pattern consisting of a series of interlocking diamonds (fig. 54). The dotted lines in the drawing indicate the method of

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folding and the overlapping of the quills one over the other. A spot-stitch has been used, crossing the underlying folds, and the stitches are all concealed.

The specimen of Gros Ventre work shown in the plate does not present the fine, careful finish so apparent in the Catlin specimens.

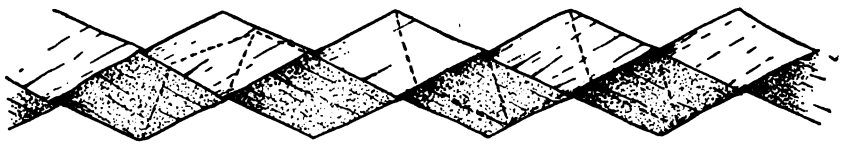

FIG. 54.—Method of folding two quills of contrasting colors to produce series of interlocking diamonds. (See pl. XIX.)

Unfortunately the latter are in such a poor state of preservation that they are not suitable for illustration.

The regularity of the drawing in figure 54 is no exaggeration of the fine work produced by the earlier artists. Where so many methods have been employed for fastening porcupine-quills to materials receiving decoration, sporadic technique might reasonably be looked for, but, strange as it may appear, few cases have come to light. A good example is shown on plate XX, in which we have a unique condition in that the quills themselves have been made to take the place of a thread, that is, they have been stitched through the surface of the deerskin in the form of what is commonly known as a herring-bone stitch.

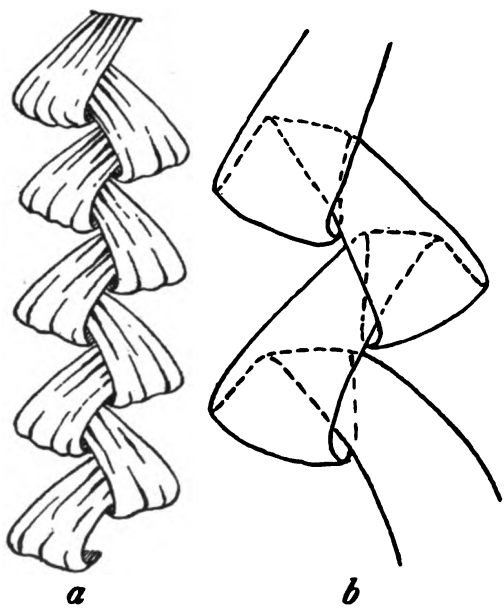

FIG. 55.—Detail of method of threading the quills through skin. (See pl. XX.)

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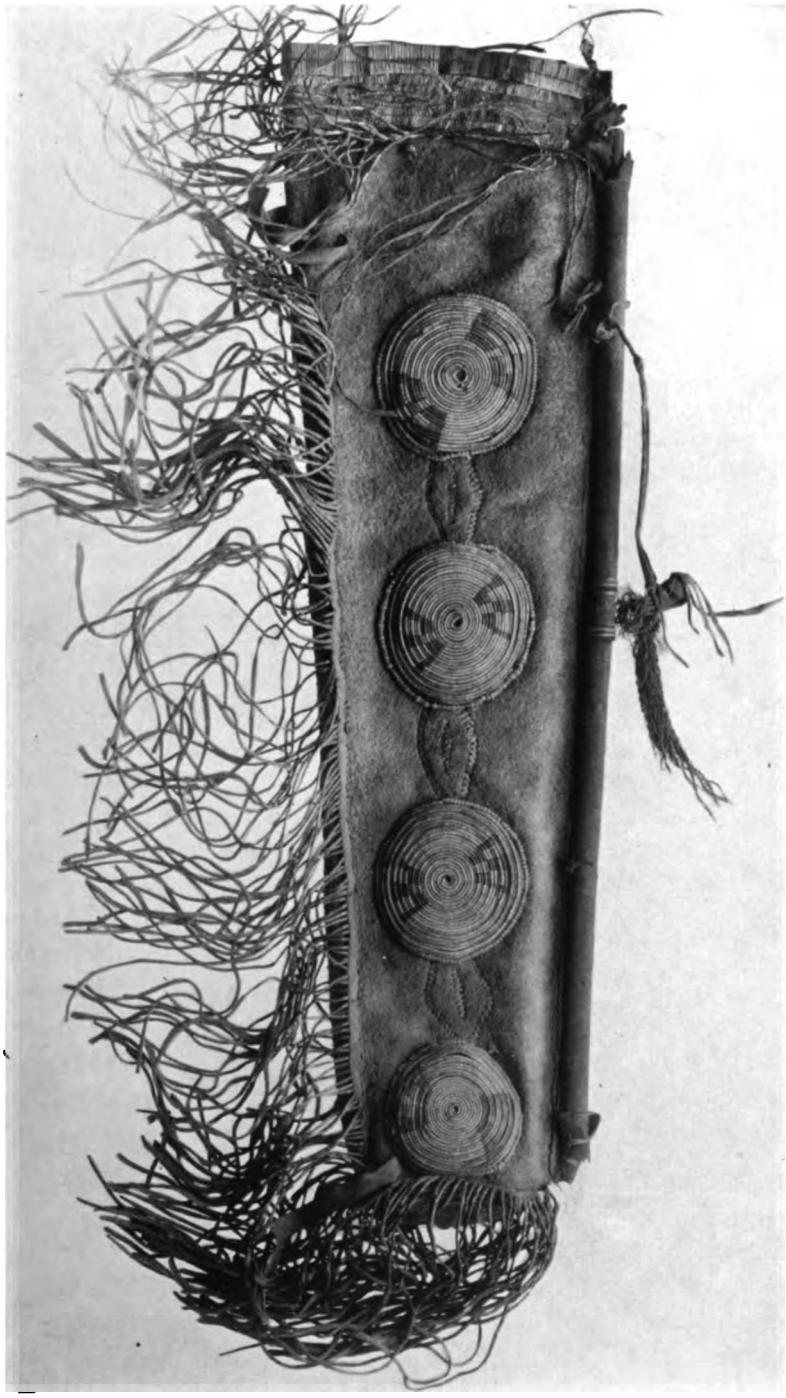

QUIVER OF NORTHERN PLAINS ORIGIN

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The drawing (fig. 55) presents the method of threading the quills through the skin. Nothing like this has been found in the many specimens examined. In the first place, no thread has been used to fasten the quills, and the herring-bone pattern has not been used on any other specimen, so far as known. The piece of work referred to may be seen on the plate in the form of three diamond-shaped figures between the discs.

The fact that examples of individuality are so few (the workers being apparently satisfied with the methods commonly in vogue), and the wide distribution of many techniques, would suggest that the art of porcupine-quill work was practised many years before the arrival of Europeans on the American continent. A great length of time would be necessary for knowledge of the various methods to become so widespread.

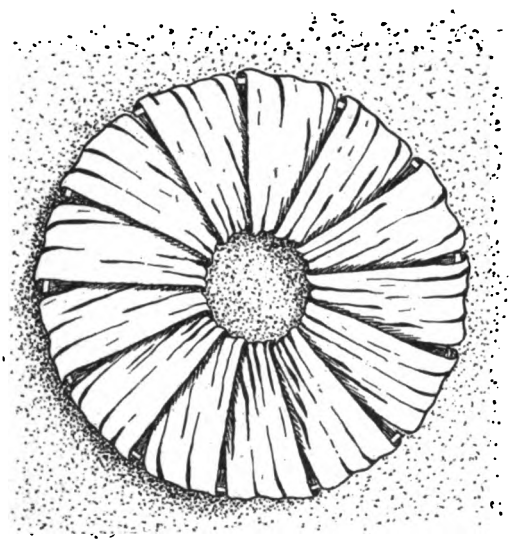

FIG. 56.—Rosette in quill-work.

Figure 56 is an enlarged drawing of a very delicate rosette which occurs on several unidentified specimens. In plate XVIII examples of this embroidery are shown with a fine, hair-like line worked around the edge of the rosette, the technique of which is shown in figure 45. Considering the size of the rosette in question, a trifle more than a quarter of an inch in diameter, this is a remarkable piece of work. The method of folding the quills to produce the circle is shown in the drawing (fig. 56); the outer edge is secured by the simple spot-stitch between each fold, while the center is held by a draw-string running through the loops of the quills and fastened into the leather with one stitch. Some of these rosettes show the use of two or more colors.

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Fringe forms a common feature of the decorative scheme of the North American Indians, and is made usually of strips of deerskin ranging from an inch or two to eighteen or twenty inches long and from an eighth to a quarter of an inch wide, and is applied to clothing in various ways, as well as to other articles for which such decoration is suitable. In many cases ornamentation has been applied to the strands of the fringe, such as wrapping them with porcupine-quills. Sewing has not been resorted to as a means of holding the quills in position where soft-tanned deerskin has been used for the fringe strands, but where rawhide or other stiff leather has been employed, a thread has sometimes been used, under which the ends of the quills have been tucked, but not in the sense of sewing as applied to other techniques.

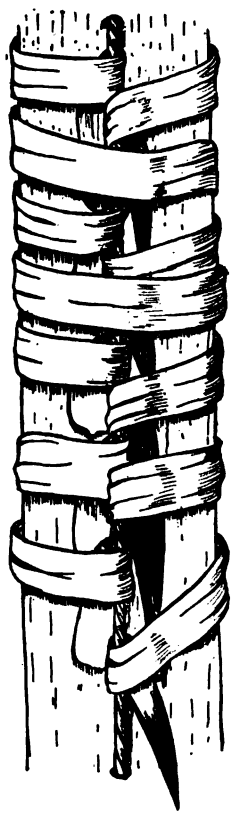

FIG. 57.—Method of ornamenting fringe with quill-work.

FIG. 58.—Method of ornamenting fringe with quill-work.

Figure 6 illustrates the method of fastening quills to a fringe of soft-tanned leather. The wrappings are laid over the ends, and where additional quills have been applied or spliced on, the two

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POUCH FROM SAUK MEDICINE-BUNDLE
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ends are held together with a half-turn or twist and the wrappings carried over these twisted ends. This makes a continuous and secure binding that does not readily become displaced. The turns of the quills around the fringe strands are made close together, so that the splicing and the ends are concealed. Long strings for pendent objects and tie-strings for moccasins have been decorated in this fashion.

This method has been used to some extent where the fringe strips have been made from rawhide, such as is frequently found on pipe-bags. There seems, however, to have been a preference for the use of a fine cord fastened at each end of the fringe strip when made of rawhide. The ends of the quills were given a half-turn around the thread, and the wrappings passed over the ends as shown in figure 57. In this case the quills were wrapped so closely that the ends and the cord were concealed. A similar wrapping is shown in figure 58, with a variation, two quills being worked along together instead of a single quill.

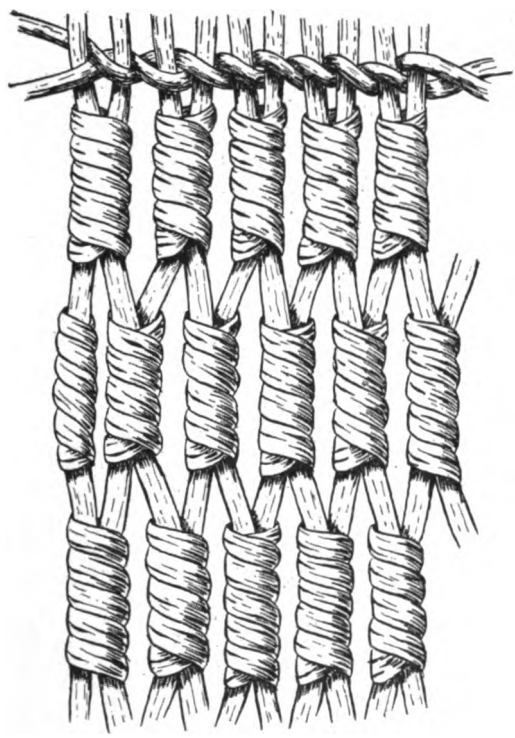

FIG. 59.—Method of ornamenting fringe with quill-work.

Wrapped fringes were apparently very popular among the quill-workers of the past, and the liking for that form of decoration prevails among modern workers, although the work is not so care-

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fully done. Judging by the specimens collected from the Plains tribes, they evidently had a preference for rawhide strips for fringes, except on clothing. Moccasins, however, are occasionally found with such fringe.

In many cases where stiff leather has been used for fringe, the strips have been fastened in such manner that they could not spread apart, and by the introduction of quills of various colors in measured spaces, some elaborate patterns have been worked out.

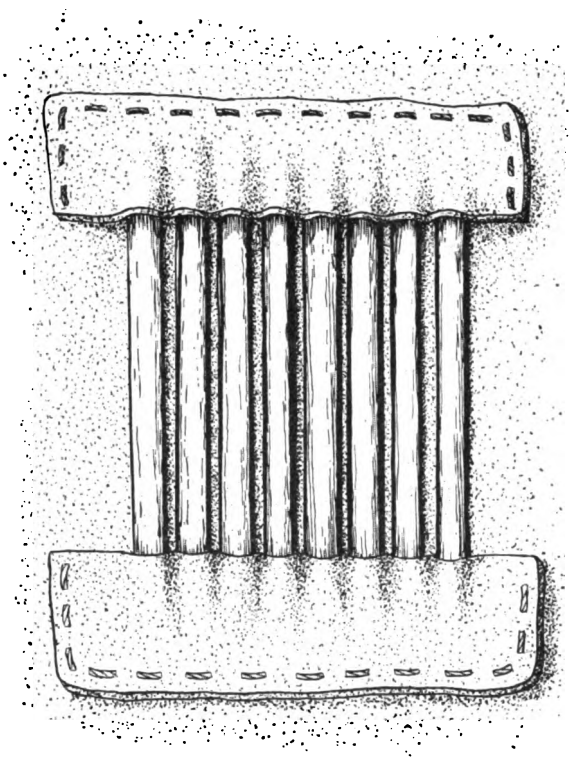

FIG. 60.—Example of crude quill-work by Thompson River Indians.

Plate XXI illustrates an interesting form of netted fringe made of a series of strands bound together in pairs. In figure 59 it will be seen that the first row of wrappings has taken the first and second strands, then the third and fourth, and so on across the width of the fringe. On the second row, the first strand alone has been wrapped, then the second and third, thus alternating the pairs with the row above, producing the net-like arrangement of the strands, with the quill-wrappings taking the place of knots of an ordinary net.

The drawing exaggerates the spread of the quills somewhat;

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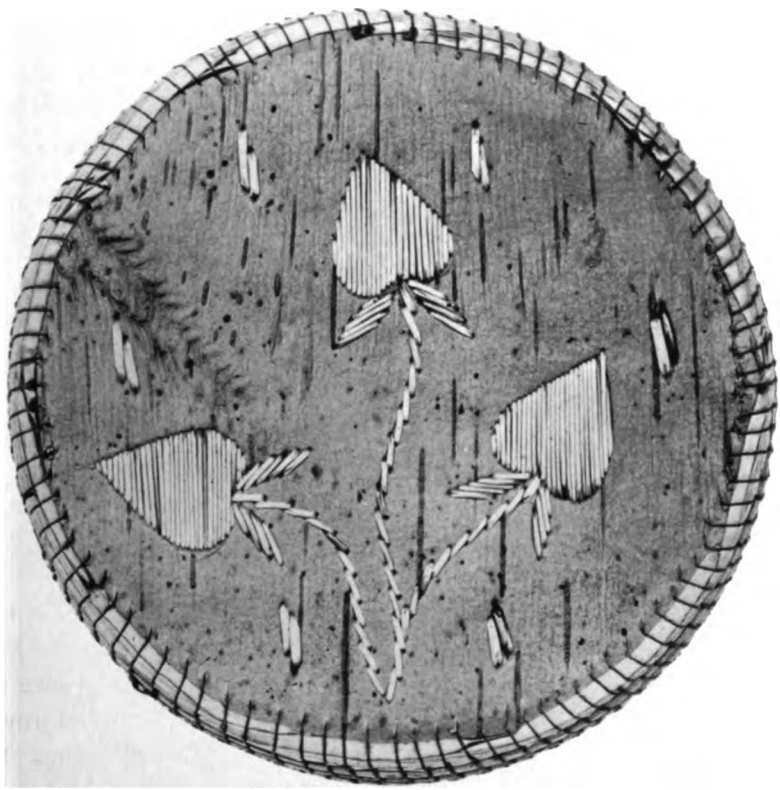

COVER OF CIRCULAR BOX. MODERN CHIPPEWA COMMERCIAL WORK

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the example illustrated has the strands almost concealed, although another object collected from the same source had the strands only partly covered. The specimens referred to were parts of the contents of two very old medicine-bundles collected from the Sauk and Foxes. Some attempt to introduce design was made by a change of colored quills producing straight lines across the fringe, which show indistinctly in the illustration. To secure the wrappings, the ends of the quills were tucked under the first and last turns, as is clearly shown in the drawing.

A rather crude piece of quill decoration emanated from the Thompson River Indians of British Columbia. The decorated objects consist of some horse trappings. The porcupine-quills have been cut into short lengths and are held in position by pieces of deerskin sewed over both ends of the quills which are laid side by side as shown in figure 60. This example is recent work and is said to be a survival of an old form of decoration.

A young Paiute man, a student at the Carlisle School, was questioned as to his knowledge of porcupine-quill work among his people. His request for materials being complied with, he fashioned an ornament as illustrated in figure 61. This is made of sections of quills cut in equal lengths and threaded as one would string beads, with a piece of leather between the sections of quills. According to his statement, it is an old form of decoration among his people, was sometimes made several feet in length, and was used as part of a woman's headdress.

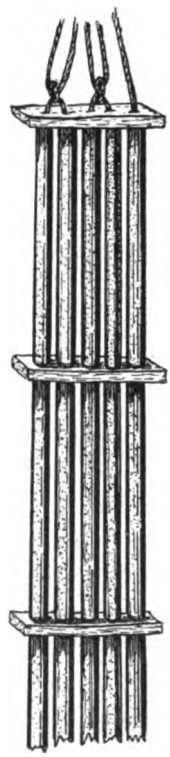

FIG. 61.—Threaded quill-work made by a young Paiute.

DECORATION OF BIRCH-BARK

The process of fastening porcupine-quills to birch-bark for decorative purposes is found to be very simple when compared with similar work on leather. Sewing is entirely dispensed with.

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Perforations are made in the bark with an awl somewhat smaller in diameter than the quills, following a design which has been drawn with a blunt-pointed implement usually made of bone or antler. A lead pencil is frequently used for tracing designs on modern commercial articles. The perforation is made immediately before the end of the quill is inserted, when the bark contracts to some extent and holds the quill tight. Unflattened quills are invariably used in this form of decoration.

Plate XXII illustrates the cover of a birch-bark box, such as is frequently found for sale at summer resorts and in curiosity shops. The design is simple, and easily and quickly applied—an important feature duly considered by the Indians when an article is made for sale. The edge has been trimmed with sweet-grass sewed with commercial thread. However, the specimen well serves the purpose of illustrating quill-decoration on birch-bark in its simplest form. The design has been worked out very tastefully, and there is a certain charm in its simplicity.

The methods employed in this case are the same as have been used on all quilled birch-bark. The design is outlined with a blunt-pointed instrument. Sometimes a stencil or cut pattern is used to guide the marker: this fact speaks for itself in the illustration, which shows three leaves to be of exactly the same shape and size. Light pressure with the bone marker produces a well-defined line on the bark which is not easily obliterated. Some specimens have been examined which show that the design had evidently been drawn without the aid of a pattern. In these instances, however, duplication of design does not occur to any extent. When the drawing is completed, the artist proceeds to fit the quills to the pattern.

The treatment of the stems of the leaves in our illustration resembles what is known as the "outline stitch" in modern embroidery, but with the difference that the quills do not form a continuous thread as in the case of an embroidery stitch, but are cut off close to the bark on the under side; that is to say, each stitch is simply a short piece of quill with its ends turned down into the bark. This is effected by passing the quill point first through a

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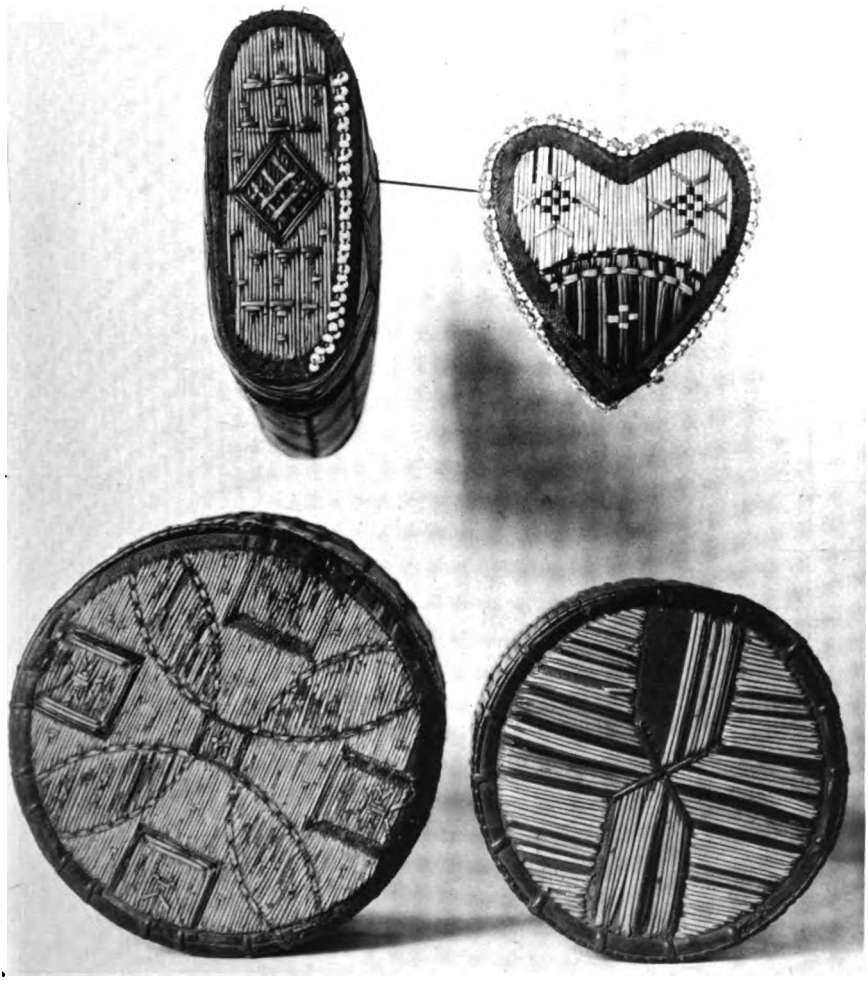

QUILLED BIRCHBARK BOXES. MICMAC
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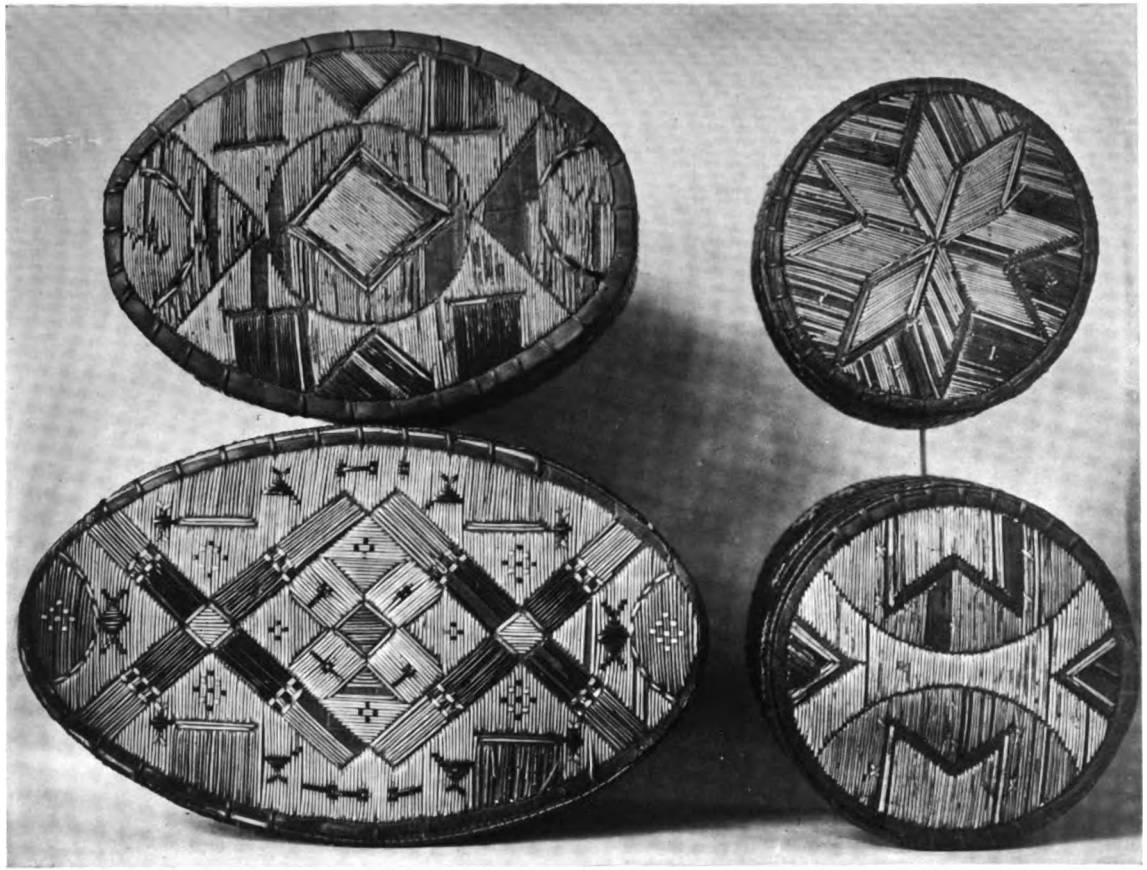

QUILLED BIRCH-BARK BOXES. MICMAC

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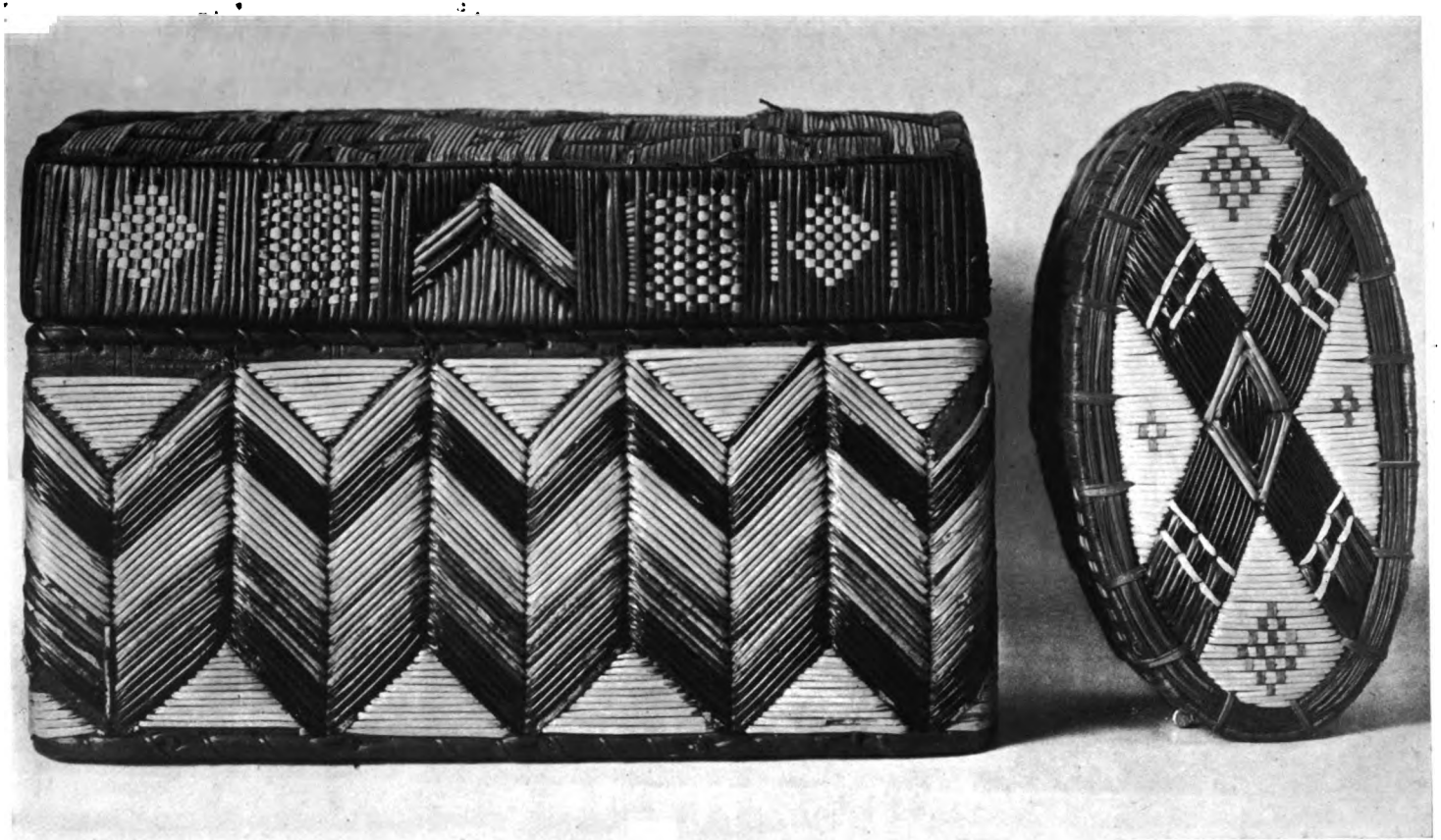

QUILLED BIRCHBARK BOXES. MICMAC

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perforation, from the under side, then from the upper side to the back, and cut off. Sometimes a quill is long enough to make several such stitches.

The leaves are given similar treatment: perforations are made along the outline, quills are inserted across the leaf, and cut off in the same manner as for the stems. This bears a resemblance to the "satin stitch" in our embroidery. Many specimens showing realism in design have been collected from the Indians inhabiting the Great Lakes region, while those to the eastward have produced more designs of a geometric nature. New Brunswick and Nova Scotia seem to lead in the latter form of decoration. Plates XXIII–XXV present some elaborate geometric designs. An artistic selection of colors has added greatly to the exquisite workmanship of the quill-work on the specimens illustrated.

The rectangular box represented in plate XXV shows a variation in decoration around the sides of the cover. Excepting a small square shown in the center of the picture, the sides have been wrapped with split spruce-root and decorated with interwoven quills in rhomboids and squares. This form of ornamentation occurs frequently and is often found to cover the sides of the boxes as well as the sides of the covers, but no box has been found with the top so decorated.

In nearly every case in which a birch-bark box is decorated with porcupine-quills, a thin piece of bark has been secured to the reverse side of the decoration, possibly as a protection for the cut ends of the quills, and in any event adding a very neat finish to the inside of the box.

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EASTERN PORCUPINE (ERETHIZON DORSATUS)

BY PERMISSION OF THE NEW YORK ZOOLOGICAL SOCIETY

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[Reprinted from the AMERICAN ANTHROPOLOGIST, Vol. 19, No. 4, Oct.–Dec., 1917.]

CERTAIN ARCHAEOLOGICAL INVESTIGATIONS IN TRINIDAD, BRITISH WEST INDIES[1]

BY THEODOOR DE BOOY

INTRODUCTION

AS this paper is intended solely to put on record the excavations made by the writer and some of the resulting specimens, it does not seem advisable to go extensively into the previous literature existing on the archaeology of Trinidad. Neither does the writer consider it imperative to illustrate many of the artifacts found or to discuss them at length, he being more desirous of explaining the conditions under which the objects were found. Some three thousand specimens in all were sent to the Museum of the American Indian from Trinidad during the four months that the writer worked on this island and it would require a bulky monograph to thoroughly describe each separate specimen.

Dr. J. Walter Fewkes, of the United States Bureau of American Ethnology, made a survey of some of the shell-heaps at Erin Bay on the south coast of Trinidad for the Museum of the American Indian (Heye Foundation) (which at that time was known as the Heye Museum),[2] and the Reverend Thomas Huckerby, who was then

[1] After an archaeological exploration of the island of Margarita off the north coast of Venezuela from February to May, 1915, described by the writer in a previous paper, (Booy, Theodoor de, "Certain Archeological Notes on the Island of Margarita (Venezuela)," *Contributions from the Museum of the American Indian (Heye Foundation)*, Vol. II, Number 5), a certain amount of work was done in the British island of Trinidad, 120 miles to the eastward of Margarita and the writer remained here from May until September of the same year. The local government of this latter island and a number of the residents and landowners were of great assistance to the writer in his archaeological work and he wishes to take this opportunity to tender the thanks of both the Museum of the American Indian (Heye Foundation) and of himself to Paul Urich, Esq., of the St. Bernard Estate near Cape Mayaro, on whose property the greater part of the work was done, to Mrs. Paul Urich for her unfailing kindness and hospitality, to Carl Boos, Esq., of Port-of-Spain, for his aid in innumerable matters and to the officials of the Royal Victoria Institute of Port-of-Spain.

[2] Fewkes, J. Walter, "Prehistoric Objects from a Shell-heap at Erin Bay, Trinidad," *American Anthropologist* (N. S.), vol. 16 (April–June, 1914), pages 200–220.

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living in Trinidad, conducted some excavations on the St. Bernard estate near Cape Mayaro, the results of which excavations are now in the Museum of the American Indian (Heye Foundation) as are the specimens obtained by Dr. Fewkes at Erin Bay. The Huckerby specimens proved to be somewhat different from those collected by Dr. Fewkes and as Mr. Huckerby obtained only comparatively few objects, the writer decided to make a thorough investigation of the remains on the east coast of Trinidad, to see if a different culture could have existed there. On arrival at Port-of-Spain, therefore, he was introduced to Mr. Paul Urich, who owns extensive plantations on the east coast of the island near Cape Mayaro (see map, fig. 61) and received a cordial invitation to come there and to excavate on the St. Bernard property. It was on this same property that Mr. Huckerby had made a number of somewhat superficial investigations and had collected those specimens that had first drawn the writer's attention to a difference between the east coast and the south coast pottery.

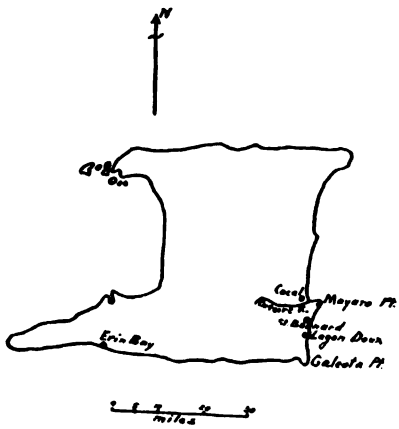

FIG. 61.—Map of Trinidad.

The shell-deposits in which the pottery and other pre-Columbian objects were found are situated on the St. Bernard property, about one and one half miles south of Cape Mayaro and one fourth of a mile inland from the sea beach. It is likely that in pre-Columbian times these deposits were a far greater distance from the sea, possibly from three fourths of a mile to a mile. The tides on this part of the east coast of Trinidad are so strong that the seashore is constantly being pushed further inland; on riding along the shore, one sees stumps of cocoanut trees on the beach as mute evidence of groves that existed before the sea swept them away and a number of the palms overhang the beach itself with part of the roots exposed by the action of the waves. After each severe easterly storm, a

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a

b

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EXCAVATIONS IN PROCESS IN ST. BERNARD MIDDENS, TRINIDAD

a. Clearing ground for trench. *b*. Diluvial deposit covering shell-heaps. *c*. Trench, 10 feet wide, through hummock. *d*. Shell- and ash-layer in deposit. *e*. Ash-layer in deposit underneath layer of *tivela mactroides*. *f*. Sherd *in situ* in shell-layer.

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number of the trees fall, owing to the fact that the waves have washed away the soil and sand that supported the roots. The writer has been assured by competent geologists that probably not more than five hundred years ago, the shore ran in a straight line from Mayaro Point to Galeota Point, which would place the St. Bernard middens fully a mile inland.

The St. Bernard deposits cover an area of possibly from six to eight acres of land and lie in what now is a cocoanut grove and what some sixty years ago was a field of sugarcane. Since the abandonment of the village site by the aboriginal inhabitants and the subsequent sugarcane and cocoanut cultivation, the shell-heaps have become covered with a diluvial deposit from one to two feet deep, so that the individual middens can hardly be recognized amid the light undergrowth that covers the soil. The writer was not able to determine the number of the individual hummocks for this reason and had to make his excavations in those places where test holes proved the deposits to be the thickest.

The first process in the excavations was to clear the slope of a hummock of the small brush and to run the lines of a future trench in such a manner that they avoided the cocoanut trees as much as possible. A clearance three feet in diameter had to be given to each tree in order to avoid damaging the roots too much. The accompanying illustration, plate III, *a* gives one an idea of the largest hummock found on the St. Bernard estate which hummock was about ten feet high. The roots of the cocoanut trees interfered to a great extent with the excavations and are no doubt responsible for a considerable amount of breakage of the pottery objects found; also, the writer had to watch the laborers constantly to prevent their chopping off the roots too near to the trees, in which event a number of the palms would have been damaged beyond recovery. It generally was possible to make the trenches from ten to twelve feet wide and to excavate in such a manner that the shells and the soil filled the trench up again back of the laborers, leaving eight feet of the bottom of the trench cleared between the cut and the refilled trench. An excavation of this sort can be seen in plate III, *c*.

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The deposits themselves ranged in depth from seven feet to less than a foot and, as has been stated, were covered with from one to two feet of diluvial deposit. Practically no objects were found in the diluvial covering, with the exception of small sherds and shells that had been moved towards the surface at those times when the soil was disturbed in cultivation. This diluvial deposit can be clearly seen in plate III, *b* and the first shell-layer under the diluvium is indicated by the laborer with his cutlass. Under the diluvial deposit came a series of clearly defined shell- and ash-layers showing the various periods of occupation of the village site. These layers reached a large number where the deposits were seven feet thick and, as is shown in plate III, *d*, did not run parallel to the surface of the ground nor did they run parallel the one to the other. It would seem as if the aborigines built their refuse-heaps in a different spot on each successive occupation, although on the same village site, which practice would account for the various angles at which the layers ran. The artifacts were most generally found in the darker ash-layers shown in the illustration. Fairly large fragments of charcoal were met with in the ash-layers and also pieces of pitch or manjak. These latter pieces probably came from the deposits that are found in various places on the east coast of Trinidad. It may be mentioned that the writer excavated a number of pottery fragments that showed signs of having been covered with this pitch; whether these fragments are of vessels in which the pitch was melted or whether the pitch had been put in the vessels to mend them, the writer is not prepared to state definitely, although in one or two instances he is almost positive that vessels had been so restored.

The shells in the shell-layers of the deposits were not mixed with soil and were comparatively clean. The ash-layers, on the other hand, were a sticky gray mass in which bone fragments, shells, charcoal and ashes were mixed. A typical ash-layer is shown in plate III, *e* and underneath this layer can be seen a shell-layer composed of the shells of *Tivela mactroides*. The writer estimated that some 40 per cent. of the shells found in the St. Bernard deposits were of this latter species and some 58 per cent. of the

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Donax variabilis, which is the small shell shown in plate III, *f*. In this illustration also is shown a large fragment of a pottery vessel *in situ*. The *Donax variabilis* is locally known as the "chip-chip" shell and is found in enormous numbers on the beach at certain times of the year. The present-day inhabitants gather these and make them into the locally renowned "chip-chip soup," a somewhat sandy delicacy greatly esteemed by the negro population. The aborigines undoubtedly used the chip-chip as one of their staple articles of diet and at those seasons when they were not found in abundance probably used the *Tivela mactroides*, which is found mostly on the sea beach north of Cape Mayaro and, strange to say, is hardly met with on the beach south of the Cape. Incidentally, the writer is of the opinion that the shells of this latter species were "steamed" in order to prepare them for food, in contrast to the chip-chip shells, which were boiled. He bases his contention on the fact that where the chip-chip shells are found clean and white in the deposits, the *Tivela mactroides* shells were always found in a blackened condition. The chip-chip shells are so small that "steaming" them would be out of the question and the only way they can be prepared is to cook them so as to detach the small animal from its shell.

The writer is indebted to Mr. L. P. Gratacap, of the American Museum of Natural History, for the identification of the shells found in the deposits and to Dr. F. A. Lucas, the director of the same institution, for the identification of some of the bones.

The sea shells found in the St. Bernard kitchen-middens are the following:

Donax variabilis Say.—58 per cent.
Tivela mactroides Born.—40 per cent.
Ostrea cristata Born.
Pecten nodosum Linnaeus.
Scarpharca brasiliana Lamarck.
Lucina jamaicensis Lamarck.
Tellina interrupta Wood.
Labiosa canaliculata Say.
Dione veneris Argenville.
Melongena melongena Linnaeus.
Melongena morio Linnaeus.

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Strombus gigas Linnaeus.
Cypraea exanthema Linnaeus.
Astralium tuber Linnaeus.

Of fresh-water shells the following two varieties were found:

Ampullaria spixii Orbiguy.
Ampullaria cornu-sarietis Linnaeus.

One species of land-shell was found, that of the

Strophocheilus (Borus) oblongus Miller.

Besides these shells, a great number of fragments of madrepore coral were found in the deposits.

Of the bones, those that were identified were of the

Deer—*Odocoileus gymnotis*, of the
Collared peccary—*Pecari angulatus angulatus* and of the
Green turtle—*Chelone mydas*.

A number of bones were found of fishes and of some of the smaller mammals which were not identifiable. The St. Bernard deposits also produced a number of crab carapaces and claws and the large crabs found in this neighborhood are even today a favorite food of the inhabitants.

Unlike on the island of Margarita, no split human bones were found in the shell-heaps. The writer found two burials in the middens and the skeletons were found in such a bunched-up position that he came to the conclusion that the dead had been placed in a contracted position, and probably had been buried in their house site. This was not an uncommon practice of the Antilleans and it was usual to afterwards abandon the house and move to another spot.[1] The two burials in question were found in a layer of sea sand under and above which were the usual shell- and ash-layers, evidence that the village site had been used before and after the deaths had taken place. It was not possible to preserve the brittle bones, but, judging from the skull fragments, the heads had been artificially flattened. The writer was especially struck by the appearance of the teeth of both skeletons: they were quite

[1] Fewkes, J. Walter, "Relations of Aboriginal Culture and Environment in the Lesser Antilles," *Bulletin of the American Geographical Society*, vol. XLVI, no. 9 (September, 1914), page 673.

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ground down, as in the case of very aged persons, yet did not show a trace of decay.

Some six miles to the south of the St. Bernard estate, on a property called Lagon Doux, also belonging to Mr. Paul Urich, the writer was shown another shell deposit on the southeastern slope of a hill about four hundred feet high and lying a mile inland from the sea beach. These deposits, however, were not thick enough to warrant the conducting of excavations and, due to centuries of rainfall, the middens had been washed down the slope of the hill and distributed over a large area with a resulting breaking-up of the objects into small fragments. A number of shallow deposits were also found by the writer on the extremity of Cape Mayaro, some three hundred feet above sea level. A cursory examination was enough to show that the deposits were too shallow to produce objects that would make excavating worth while.

On the Cocal property, about four miles to the north of Cape Mayaro, the writer discovered an isolated shell-heap, twelve feet high with a diameter of about fifty-five feet, composed almost exclusively of the shells of *Tivela mactroides*. This shell-heap presented a curious problem to the investigator, as its height and isolation made it prominent in the landscape. Shallow shell-deposits were found bordering it on all sides but, as in the previously cited cases, the writer did not consider it worth while to excavate in any of these, although test holes and small sherds on the surface of the ground proved conclusively that an Indian occupation had existed here. A ten-foot trench was dug through the isolated mound north and south and another ten-foot trench east and west, forming a cross over the summit of the mound. While a large number of small pottery sherds had been found on the surface of the ground in all directions from the mound, not a single sherd was found in the mound itself. Three hammerstones were found and two small pieces of rock-crystal, the latter evidently having been brought there from the northern mountain range of the island of Trinidad, the only place on the island where these crystals are found according to reputable local geologists. It will be seen, therefore, that this isolated mound, exclusively composed of shells,

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in which no ashes, or bones and practically no artifacts were found, presents a curious problem compared to the other shell-deposits on the east coast of Trinidad, a problem which the writer is not able to solve.

Archaeological Results from the Excavations

The most typical of all the various pottery vessels found in the St. Bernard middens is a shallow bowl form with a broad angular rim. It is safe to say that of the sherds found, at least 75 per cent. indicated that they belonged originally to a vessel of this type and this form, therefore, in its many variations, can be taken as being typical of the east coast region of Trinidad.

The simplest form of vessels of this type is the small bowl *a* shown on plate IV. This little dish has a main diameter of $7\frac{1}{4}$ inches and an inside diameter of $5\frac{1}{2}$ inches and its height is $1\frac{7}{8}$ inches. The angular rim itself is $\frac{7}{8}$ inch wide and was covered with a red paint by the potter on the upper surface. The body of the bowl is of a buff color and the paint on the rim was probably applied after the firing of the vessel and can easily be washed off. The pottery is $\frac{3}{8}$ inch thick. It must be noted that in all vessels of this type the height of the vessel is from $\frac{1}{3}$ to $\frac{1}{4}$ of its outside diameter. The base of this type of vessel is invariably flat but, judging from sherds found, was in some instances extended into a circular stand to give added stability to the vessel. While the specimen illustrated has a painted rim, a large number of bowls of this type were found of which the rim had not been painted and was of the same color as the vessel proper. This then is the simplest form of the type under discussion.

The next addition to the decoration of this type of bowls are the handles and an astonishing variety of forms of the latter were met with in the St. Bernard deposits. In plate V, *a*, can be seen one of these bowls to which has been added two loop handles of a somewhat elaborate pattern. Outside of this addition the bowl does not differ materially from the one previously described, excepting that it is far larger. The diameter of the bowl itself is 12 inches and its depth 4 inches. The thickness of the pottery is $\frac{3}{8}$ inch and the ware is buff colored.

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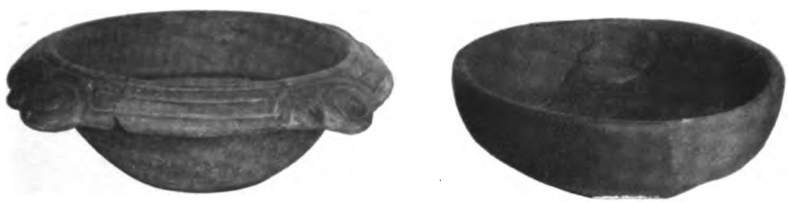
a *b*



c *d*

e *f*

POTTERY VESSELS FROM ST. BERNARD MIDDENS

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Then again, the potter took the plain bowl of this type and added a design of incised lines to the rim. The simplest form of this were from one to six concentric lines running around the rim. In plate IV, *b*, can be seen a small bowl to which the potter, by way of decoration, has added two incised lines running concentrically around the rim and four extra semi-circular lines from the outside incised lines to the outside of the rim. The main diameter of this small bowl is 7 inches and the inside diameter 5½ inches: the height is 1¾ inches and the ware ⅜ inch thick. This bowl is reddish-brown in color.

In addition to the incised lines, the potter occasionally added nodes or lugs on the rim and an example of this decoration is shown on plate IV, *c*. The rim of this specimen has concentric incised lines and four nodes which are placed equidistant. The nodes probably represent highly conventionalized heads. The specimen under discussion has an outside diameter of 8½ inches, an inside diameter of 5¾ inches and stands 2¾ inches high. The ware is ⅜ inch thick and the vessel is buff-colored.

The most highly decorated form of all is where in addition to the incised lines on the rim, handles of various forms have been added. While only a comparatively small part of the bowl shown on plate V, *b*, was recovered, this specimen may serve to illustrate the highest development of decoration of the type of vessel under discussion. This specimen has an angular rim upon which incised lines have been carved. Furthermore, nodes have been added to the rim and besides these, a handle representing a conventionalized human head. This head is quite massive and it is permissible to state that another head of the same type must originally have opposed it on the rim. The original diameter of this bowl was 12 inches and its estimated height 4½ inches. The ware is ⅜ inch thick and reddish-brown in color.

A critical examination of all vessels with angular rims found in the St. Bernard shell-heaps will reveal the fact that each and every one of them can be classified under one of the vessels described above. The vessels range in size from some with an outside diameter of 3 inches and a height of 1 inch to the largest with an outside diameter of 16½ inches and a height of 5 inches.

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Yet another type of bowl was found to occur frequently in the deposits and one of these is shown on plate V, *c*. This, of course, is the simplest form of round vessel that it is possible for a potter to make. A number of small differences in outline can be found but fundamentally, the bowls are of course the same. The specimen illustrated has a diameter of 10 inches and a height of $3\frac{1}{4}$ inches. The ware is $\frac{3}{8}$ inch thick and is of a gray-brown color. The rim is slightly thicker than the base part of the vessel. The base of this bowl is indented. The inside of this vessel is partly covered with pitch or manjak, and the writer has already mentioned the occurrence of this latter substance in the shell-heaps. He does not believe that in the case of the illustrated vessel this pitch was employed to mend a break in the bowl, as to his mind, in that event the pitch would have probably been applied to the outer surface of the bowl. The writer presumes that the vessel must have been used as a container for the molten pitch. A number of sherds were discovered, however, that had the pitch applied to the inner and to the outer surface, and cases were met with where the vessel showed signs of having been cracked under the pitch-layers. It is permissible therefore to assume that the aborigines were in the habit of mending their cracked vessels with layers of pitch to strengthen the cracked place and to make the vessel liquid-tight.

A slight variation on this type of shallow bowl is shown on plate IV, *d*, where the convex basal part of the vessel is topped by a perpendicular rim. This rim is $1\frac{1}{2}$ inches high and has been painted red on the in- and on the outside. The body of the bowl is yellow and the entire vessel stands $2\frac{3}{8}$ inches high. The diameter of the bowl is 6 inches, and the ware is $\frac{1}{4}$ inch thick.

This type of vessel, of which the two specimens described above can be considered typical samples, occurred in large quantities in the middens. Occasionally the rim was thickened or painted and the vessels ranged in size from a diameter of $3\frac{3}{4}$ inches (the smallest specimen of this kind found) to a diameter of $13\frac{1}{2}$ inches.

Perhaps the most unusually shaped vessel found in the St. Bernard deposits is the one illustrated on plate V, *d*. The writer knows of no other vessel like it from the West Indies and considers

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a

b

c

d

POTTERY BOWLS FROM ST. BERNARD

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the form unique. The handles of this four-cornered bowl undoubtedly represent the heads of the armadillo, an animal that is frequently found in Trinidad and that is considered a great delicacy by the natives. It may be mentioned that a large number of heads were found in the shell-heaps that represented the armadillo and we judge from this that it was a favorite practice of the aborigines living around Mayaro to thus ornament their pottery vessels. Incised circles ornament the two other terminals of the vessel under discussion and an incised cross can be seen in the one, while the opposite circle contains twelve impressed pits. The bowl is not well made as far as symmetry is concerned. It has a flat base and stands 5 inches high at the rounded terminals. The length of the vessel across the heads is 13¼ inches and it has a short axis of 10¼ inches. The ware is quite thin for such a large vessel, ¼ inch. The color of the bowl is buff. Between the heads and the rounded terminals can be seen panels of incised decorations. There is a small lug on either side of the heads and another lug below the incised circle of the rounded terminals.

Another vessel of elaborate pattern is that shown on plate IV, *e*, a fragment of which is also illustrated *in situ* in plate III, *f*. It is likely that this is one of the so-called turtle-bowls, judging from the shape and design of the incomplete vessel. The head of the turtle can still be seen, but the tail is missing. The four rounded parts of the rim—of which three remain—represent the flippers of the turtle in a conventionalized manner and the outside of these flippers have been decorated with cross-hatched incisions and covered with a dark-red slip of pigment on the in- and on the outside. The rounded parts of the rim are surmounted by a small lug with two incisions. The base of this vessel is flat. The diameter of this bowl is 7 inches and it stands 2 inches high where the head is and 3¼ inches at the highest point of each flipper. The ware is ¼ inch thick and the body of the bowl is painted yellow.

On plate IV can be seen another unusual bowl, *f*, of which but a fragment was found. This vessel originally must have been rectangular in shape and has a flat, round base. A grotesque human head serves as handle at the one end and it would be inter-

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esting to know whether the other terminal was provided with a handle and if so, what shape it had. An incised line surrounds the rim on the outside and the rim has been covered with a dark-brown slip of pigment, also on the outside. The grotesque head also has been covered with this dark-brown pigment. The vessel has a width of $6\frac{1}{2}$ inches and an estimated length of about 8 inches. The height is $2\frac{1}{2}$ inches and the ware, brown in color, is $\frac{3}{8}$ inch thick.

The small vessel illustrated on plate VI, *a*, is unusual in so far that it reminds us more of the pottery from Santo Domingo and Porto Rico with its incised decoration surrounding the rim in a geometrical pattern. The outline of this vessel was restored from the fragments found and it cannot be determined whether the base was flat or rounded. The largest diameter of this bowl is $4\frac{3}{4}$ inches and the diameter of the mouth $3\frac{3}{4}$ inches. The ware is $\frac{3}{8}$ inch thick and the bowl is brown in color.

The flat, discoidal-shaped vessel with the comparatively small mouth illustrated on plate VI, *c*, recalls to our mind the sea-urchin and it may well be that the potter derived the contour of this bowl from the shape of this animal. This vessel is unique in shape as far as the West Indies are concerned and no other fragments of like vessels were found in the St. Bernard deposits. The little bowl stands but $2\frac{1}{2}$ inches high and its largest diameter is $6\frac{1}{4}$ inches, while the diameter at the mouth is $3\frac{1}{2}$ inches. The thickness of the ware, which is brown in color, is $\frac{1}{4}$ inch. An incised line surrounds the mouth of the vessel and forms the only decoration.

The smallest vessel found is the one illustrated on plate VI, *b*, which stands but 2 inches high. It can hardly be supposed that this miniature vessel was intended for a container. The vessel is provided with two small, perforated lugs. An incised line surrounds the rim and two more incised lines the body of the vessel. The ware is brown in color and $\frac{1}{4}$ inch thick. No sherds were found of other vessels of this small size.

A number of double paint-bowl vessels were found in varying sizes and the smallest of these is illustrated in plate VI, *d*. The length of this specimen is $4\frac{3}{8}$ inches and the height $1\frac{1}{2}$ inches. The ware is brown in color and $\frac{3}{16}$ inch thick. There is a small lug on each side of the wall separating the two bowls.

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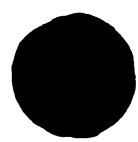
a

b

c

d

e



f

POTTERY OBJECTS FROM ST. BERNARD REFUSE HEAPS

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The small perforated globular object with the incised lines, shown on plate VI, *f*, is either a pottery bead or else was used as a spindle whorl. This is the only specimen of this kind recovered from the Mayaro kitchen middens.

A very large number of pottery heads and handles were excavated in the shell-heaps. These do not differ materially from those illustrated in Dr. Fewkes' paper on the archaeology of Trinidad[1] or from those figured in the writer's paper on the archaeology of Margarita Island.[2] The heads shown in Dr. Fewkes' paper, from Erin Bay on the south coast of Trinidad are of a slightly coarser manufacture, but resemble the Mayaro specimens in type. It may be noted in this connection that all the St. Bernard pottery was of a more delicate finish than that from Erin Bay and the vessels were not as thick as the vessels collected by Dr. Fewkes. The writer only figures two of the heads collected in the St. Bernard deposits, as these two heads are uncommon in type and are of a variety not previously figured. Specimen *a*, plate VII, is an extremely massive head and larger than the usual types and represents a conventionalized human head. The mouth and the eyes are depicted by incised lines: small impressed pits serve to indicate the nostrils and the ears also have pits to indicate perforations. This specimen stands 4 inches high and is dark-gray in color. Specimen *b* of plate VII is a flat handle and also represents a conventionalized human head. No other specimen like it was found or is known to the writer, from the West Indies. The head is flanked by large scroll-like ornaments. The forehead is ornamented with cross-hatched incisions, as is the back of this handle. The height of this specimen is $3\frac{3}{4}$ inches and it is dark-brown in color.

An extremely large number of spool-shaped pottery rests were found, of varying sizes and two of these objects, *c* and *d*, are illustrated on plate VII. *c* has an inside diameter of $2\frac{5}{8}$ inches and an outside diameter of $4\frac{1}{4}$ inches and stands $1\frac{1}{2}$ inches high. The ware is $\frac{3}{8}$ inch thick and is brown in color, covered with a red slip of pigment. *d* has an inside diameter of $2\frac{1}{2}$ inches, an outside diam-

[1] Fewkes, J. Walter, *op. cit.*, plates XVI, XVII, XVIII, and XIX.

[2] Booy, T. de, *op. cit.*, plate II.

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eter of $4\frac{5}{8}$ inches and stands $2\frac{1}{2}$ inches high. The ware is $\frac{1}{2}$ inch thick and is brown in color covered with a red slip. Incised lines decorate the body of this rest. On *c* can be seen single and double nodes which are placed symmetrically around the rim of the object. Some of the pottery rests found were ring- instead of spool-shaped and an astonishing variety of ornamentation was found in the objects of this class.

The writer has purposely left a discussion of the highly decorated painted pottery to the last. It has already been stated that many of the vessels and sherds found showed that a superficial slip or wash of paint had been applied to the ware. This, however, had either been applied after the firing of the clay or else had been applied before the firing and had not become a very substantial part of the ware. A very large number of fragments were found, however, upon which was found a heavy slip of solidly-applied pigment in geometrical designs and these fragments seem to have been subjected to great heat in the firing and are far less brittle than the specimens previously described. Three of these sherds were found on Margarita Island[1] and these sherds were identical with some eight hundred fragments found in the St. Bernard middens. It must be noted that on no other part of Trinidad have sherds of this class been found to the writer's knowledge. What makes the finding of this kind of pottery all the more interesting to the archaeologist is the fact that it was not possible to reconstruct a single vessel from the sherds found: not only were no sherds of one same vessel found but no two sherds were found even that fitted on to each other. In the object illustrated in fig. 62, the reader will note the presence of "breaks" in the object, but these breaks

FIG. 62.—Pottery monkey head.

[1] Booy, T. de, *op. cit.*, page 20, fig. 7.

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were the result of the excavation and not of the later matching together of the pieces. It would seem, therefore, as if the aborigines that made this particular class of pottery not only broke the vessels up, but took pains to distribute the resulting fragments over a large area. The writer can offer no explanation for this seemingly meaningless custom.

On plate VIII, *a* and *c* can be seen two of the sherds under discussion and a superficial examination will convince the reader that these sherds belong to a totally different class of pottery than the kind previously discussed. The ware appears to be far better baked and is not so fragile; the slip is thick and consists of red, brown, yellow, black and white pigment. The designs are applied

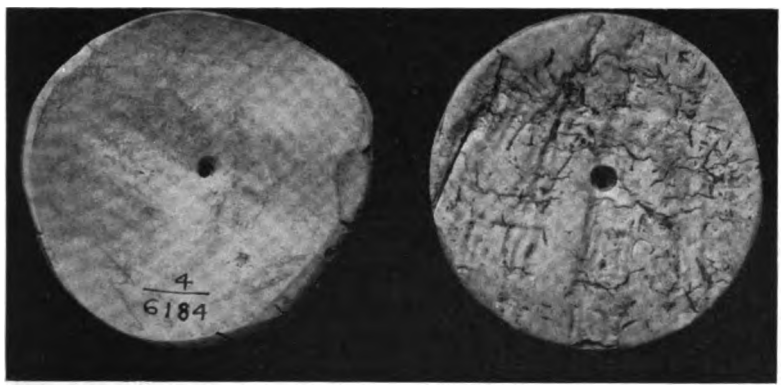

FIG. 63.—Large shell-disks.

in geometrical patterns and it is to be regretted that not enough of one design is left on any one sherd to enable the writer to work it out. The vessels were frequently provided with handles, upon which the potter also placed a painted design. One of these handles is illustrated on plate VIII, *b*. Nodes or lugs also were added to the vessels; one of these is shown on plate VIII, *d*. Then again some the vessels must have had pottery-heads, of which a grotesque sample is shown in *f* of the same plate. Another head, *e*, is also shown, which head was part of the base of a vessel.

Judging from a number of the sherds found, some of the vessels served as containers for liquids and had a highly ornamented head

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on top of the vessel proper which served as a spout. The best specimen found is shown in fig. 62 and probably represents a monkey head. Only two colors, white and red, were used to decorate the gray ware of this object, which stands 4 inches high.

The vessel shown on plate VI, *e*, does not belong by rights to the class of pottery described above, although it has received the same painted slip. The ware of this object however is brittle and not well baked and resembles the ware of the vessels first described in this paper. The decoration is red and white in geometrical design over a brown ware and the writer is inclined to believe that the potter intended this vessel to represent a turtle. Four nodes represent the flippers and the tail is shown. The head has been broken off. This vessel stands 4 inches high and has a main diameter of $5\frac{1}{2}$ inches. The diameter of the mouth is $1\frac{1}{4}$ inches.

A large number of fragments of pottery griddles for the baking of cassava bread were found in the shell-heaps, which fragments did not differ from objects of the same class found throughout the West Indies.

FIG. 64.—Pendant of Amazon stone.

Two large shell-disks were found, shown in fig. 63, which undoubtedly were objects of personal adornment. These disks or gorgets have a diameter of $2\frac{1}{4}$ inches and are about $\frac{3}{16}$ inch thick.

Yet another pendant ornament is shown in fig. 64. This little object is made of Amazon stone, is $1\frac{5}{8}$ inch long and 1 inch wide and $\frac{1}{8}$ inch thick.

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a

b

c

d

POTTERY HEADS AND POTTERY RESTS FROM ST. BERNARD MIDDENS

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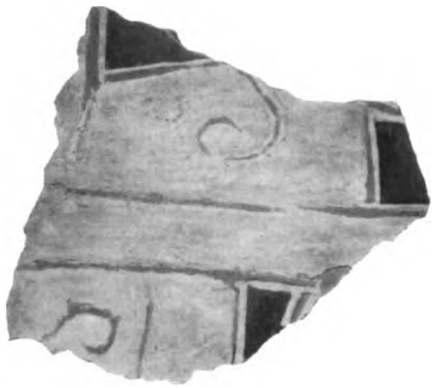

a

b

c

d

e

f

POTSHERDS, LUGS, AND POTTERY HEADS FROM ST. BERNARD MIDDENS

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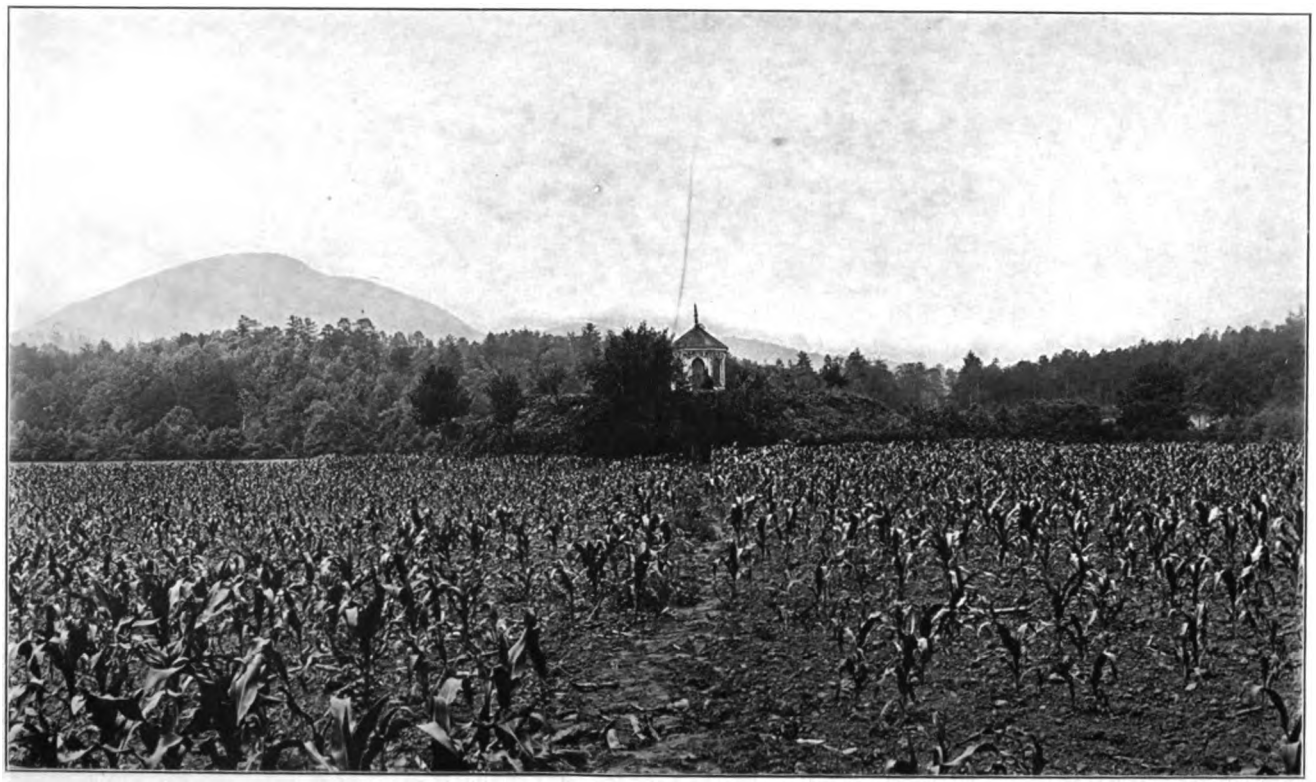

THE NACOOCHEE MOUND FROM THE NORTH; MOUNT YONAH IN THE DISTANCE

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THE NACOOCHEE MOUND IN GEORGIA

BY

GEORGE G. HEYE, F. W. HODGE,

AND

GEORGE H. PEPPER

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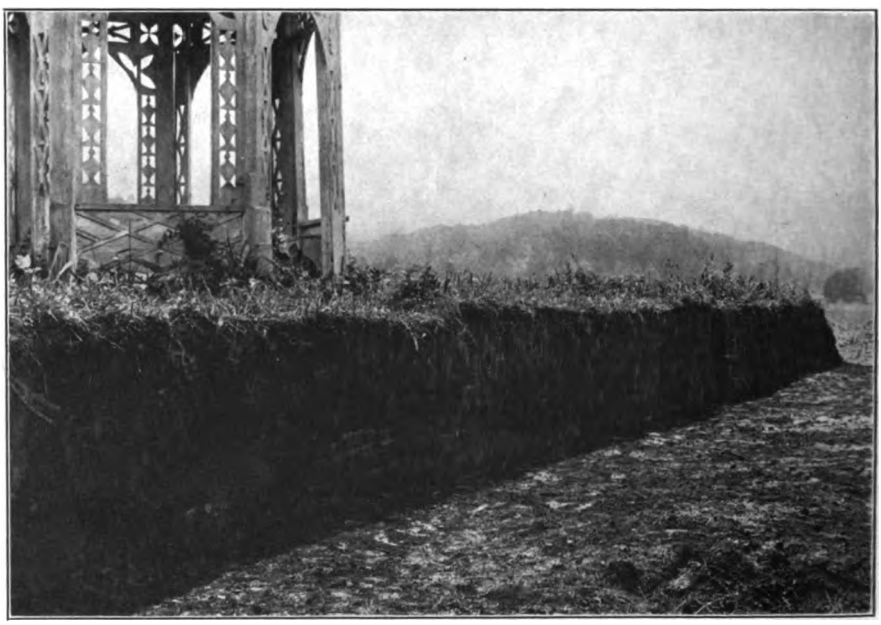
A. NACOOCHEE MOUND FROM THE SOUTHEAST, BEFORE EXCAVATION



B. EXCAVATION OF A FOUR-FOOT SECTION FROM THE SUMMIT

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INTRODUCTION

IN the attractive little Nacoochee valley, drained by the extreme headwaters of the Chattahoochee between Sautee and Soquee creeks in White county, northeastern Georgia, and within the shadow of Mount Yonah which looms toward the southeast (pl. I), rises an artificial mound, slightly more than seventeen feet in maximum height, which forms a conspicuous landmark in the region. This earthwork, which stands about 300 yards north of the river, was excavated to a considerable extent in the summer of 1915 by a joint expedition of the Museum of the American Indian, Heye Foundation, and the Bureau of American Ethnology of the Smithsonian Institution. The slope of the mound was steep, and its base clearly marked from the surrounding field owing to extended cultivation during many years and the plowing away of the lower part of the sides (pl. II, *a*). Moreover, the top of the mound had also been plowed away years before to afford a level space for the erection of a summer-house and the planting of a garden, water for which had been piped from the adjacent residence, now the home of Dr L. G. Hardman, the owner of the land on which the earthwork is situated. In view of this change in the configuration of the mound and the fact that wear by the elements in this unusually wet region during a considerable period between its abandonment by the Indians and the settlement of Nacoochee valley by whites, the measurements made in 1915 do not indicate, perhaps within many feet, the original height and circumference.

Permission to excavate the Nacoochee mound was granted by Dr Hardman for a consideration mutually satisfactory and on

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condition that its form be restored and any precious metals found during the progress of the work should be placed in the owner's hands. As in other parts of the country, the belief is prevalent in Georgia, even among educated people, that hoards of gold are hidden beneath earthworks reared by Indians in ancient times, and this belief is especially current in northern Georgia where gold was found in the early part of the last century, a mint being established at Dahlonega in 1838 and maintained for some years. A preliminary examination of the Nacoochee site was made in May, 1915; active operations were commenced on June 19 by Mr Heye and continued until July 2, when, during his absence of a few days, the excavation was in charge of Mr E. F. Coffin, of the Museum staff, who presented daily reports. Mr Hodge joined in the work early in July, from which time the excavations proceeded under the coöperation of himself and Mr Heye. Conditions necessitating the return of Mr Heye to New York and of Mr Hodge to Washington late in August, the work was continued from the 28th of the latter month until October 29 under the immediate charge of Mr Pepper, assisted by Mr Coffin. Thus the Nacoochee excavations were conducted uninterruptedly for a period of more than four months. While it has been found convenient for Mr Hodge to prepare this report, it must be understood as embodying not only the results of his own observations on the features of the site and of the artifacts found, but those of Messrs Heye and Pepper as well.

Although it was the intention to excavate the mound completely, conditions were such, especially those occasioned by excessive rainfall, that it was not possible to remove the entire earthwork during a single field season, and a satisfactory concession for the resumption of the work in the following summer could not be obtained from the owner. The present report, therefore, embodies the results of the excavation by the joint expedition, together with some information published by C. C. Jones in 1873, and such knowledge respecting the earlier history of Nacoochee as has come down to us.

HISTORY

Of the history of the Nacoochee site very little is known, and although the name itself is a corruption of the Cherokee form

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STONE GRAVE (BURIAL 34)

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Nagu'tsĭ', "the meaning of the word is lost and it is doubtful if it be of Cherokee origin."[1] Mr Mooney suggests that the name may have some connection with that of the Yuchi Indians; and according to information communicated to the writer by the late H. S. Halbert, who possessed a wide knowledge of the Choctaw language, the term so closely resembles the Choctaw *nakúshi*, which signifies "little arrow," as to suggest Muskhogean derivation.

That Nacoochee was a village of the Cherokee Indians during historic times, there is no question. The settlement first became known to the Spaniards of the De Soto expedition, who visited it in the latter part of May, 1540. The narrations of this expedition have been summarized by Mr Mooney, so that it is not necessary for the purpose of this paper to present anew the accounts given by the chief chroniclers of that remarkable journey of the Spanish forces. Mr Mooney says:

"After several days of such travel they arrived, about the end of the month, at the town of Guasili, or Guaxule. The chief and principal men came out some distance to welcome them, dressed in fine robes of skins, with feather head-dresses, after the fashion of the country. Before reaching this point the queen [the chieftainess of Cofitachiqui, probably a Yuchi province and town, who had been made a prisoner] had managed to make her escape, together with three slaves of the Spaniards, and the last that was heard of her was that she was on her way back to her own country with one of the runaways as her husband. What grieved De Soto most was that she took with her a small box of pearls, which he had intended to take from her before releasing her, but had left with her for the present in order 'not to discontent her altogether.'

"Guaxule is described as a very large town surrounded by a number of small mountain streams which united to form the large river down which the Spaniards proceeded after leaving the place.[2] Here, as else-

[1] James Mooney, Myths of the Cherokee, *Nineteenth Annual Report of the Bureau of American Ethnology*, Vol. 1, pp. 526–527, Washington, 1902. Mr Mooney states that the name Itsâ'tĭ likewise was applied to the Nacoochee mound, although primarily it was the proper form of Little Echota, on Little Tennessee river, and of Echota, on Sautee creek.

[2] The streams referred to, no doubt, are Soquee and Sautee creeks which unite to form the Chattahoochee. The principal mountains in the vicinity, peaks of the Blue Ridge, are Mount Yonah, Sall's Mountain, and Lynch's Mountain.

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where, the Indians received the white men with kindness and hospitality —so much so that the name of Guaxule became to the army a synonym for good fortune. Among other things, they gave the Spaniards three hundred dogs for food, although, according to the Elvas narrative, the Indians themselves did not eat them. The principal officers of the expedition were lodged in the 'chief's house,' by which we are to understand the townhouse, which was upon a high hill with a roadway to the top. From a close study of the narrative it appears that this 'hill' was no other than the great Nacoochee mound, in White county, Georgia, a few miles northwest of the present Clarkesville. It was within the Cherokee territory, and the town was probably a settlement of that tribe. From here De Soto sent runners ahead to notify the chief of Chiaha of his approach, in o der that sufficient corn might be ready on his arrival." [1]

"In five days of such travel—for here, for a wonder, all the narratives agree—they came to Guaxule. This is the form given by Garcilaso and the Gentleman of Elvas; Biedma has Guasula, and Ranjel Guasili or Guasuli. The translators and commentators have given us such forms as Guachoule, Quaxule, Quaxulla, and Quexale. According to the Spanish method of writing Indian words, the name was pronounced Washulé or Wasuli, which has a Cherokee sound, although it can not be translated. Buckingham Smith (Narratives, p. 222) hints that the Spaniards may have changed Guasili to Guasule, because of the similarity of the latter form to a town name in southern Spain. Such corruptions of Indian names are of frequent occurrence. Garcilaso speaks of it as a 'province and town,' while Biedma and Ranjel call it simply a town ('*pueblo*'). Before reaching this place the Indian queen had managed to make her escape. All the chroniclers tell of the kind reception which the Spaniards met here, but the only description of the town itself is from Garcilaso, who says it was situated in the midst of many small streams which came down from the mountains round about, that it consisted of three hundred houses, which is probably an exaggeration, though it goes to show that the village was of considerable size, and that the chief's house, in which the principal officers were lodged, was upon a high hill ('*un cerro alto*'), around which was a roadway ('*paseadero*') wide enough for six men to walk abreast. By the 'chief's house' we are to understand the townhouse, while from various similar references in other parts of the narrative there can be no doubt that the 'hill' upon which it stood was an artificial mound. In modern Spanish writing such artificial

[1] Mooney, op. cit., pp. 25–26.

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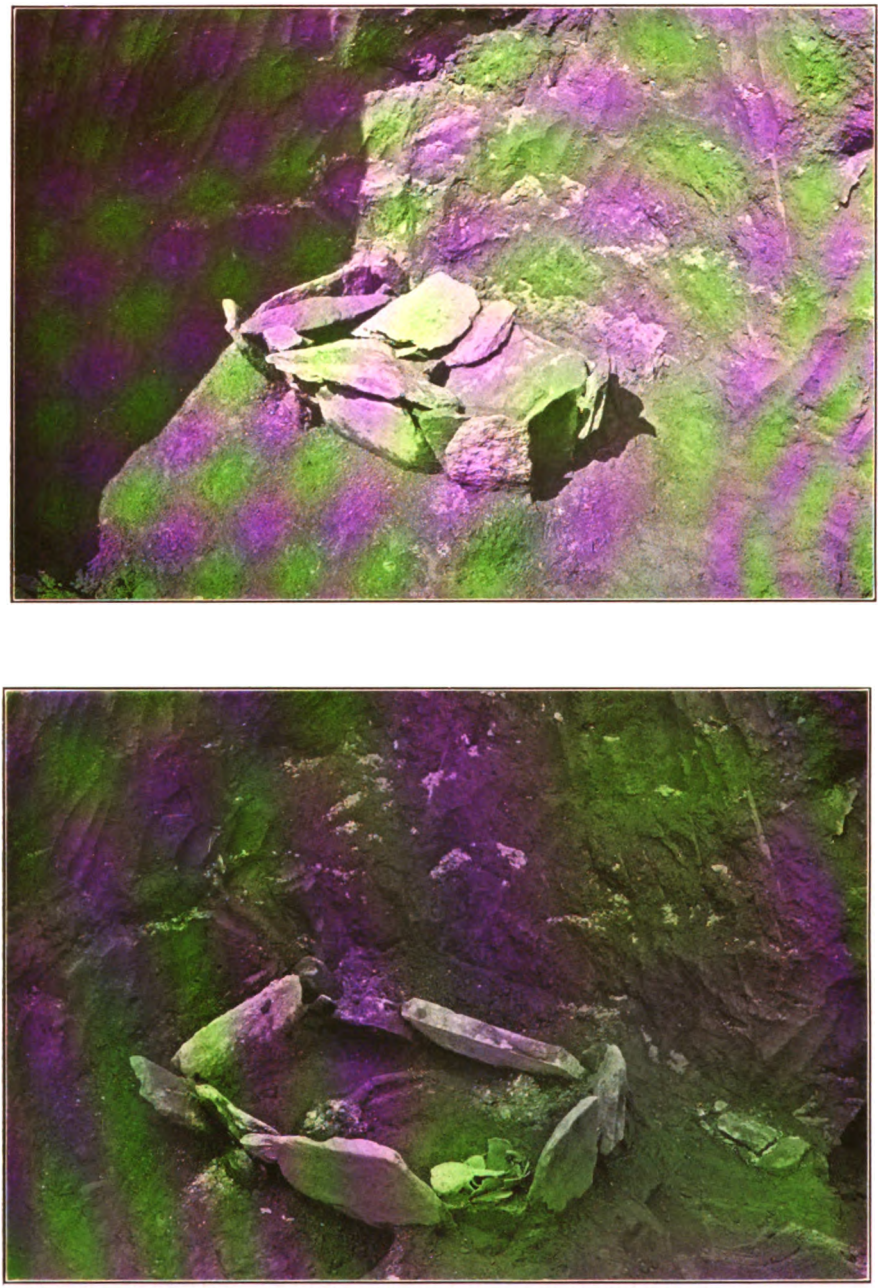

STONE GRAVE (BURIAL 39) BEFORE AND AFTER REMOVAL OF THE COVERING SLABS

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elevations are more often called *lomas*, but these early adventurers may be excused for not noting the distinction. Issuing from the mountains round about the town were numerous small streams, which united to form the river which the Spaniards henceforth followed from here to Chiaha, where it was as large as the Guadalquivir at Sevilla."[1]

Nacoochee seems also to have been visited by Juan Pardo in 1567, if we may identify his "Cauchi" with the name of that settlement, which is possible but not certain.[2]

The settlement is mentioned by Bartram,[3] under the name Nae oche, an evident misprint of Nacoche, as among the forty-three towns of the Cherokee in 1776; and it appears as Naguchee, between Echotee and Cussatee, on "An Accurate Map of North and South Carolina," etc., by Henry Mouzon and others, 1775, in Thomas Jefferys' American Atlas, map 23, London, 1776. It does not appear, however, in a list of fifty-one settlements in a distribution roll of Cherokee annuities of 1799,[4] although this omission is not to be regarded as conclusive evidence that Nacoochee did not exist at that time. The Nacoochee valley was on the free public road laid out between 1813 and 1815 which extended from Tennessee river to the head of navigation on the Tugaloo branch of Savannah river, which became the great highway from the coast to the Tennessee settlements.[5] The valley was included in the great area of land ceded by the tribe to the United States by the treaty of Washington, February 27, 1819,[6] following the treaty of July 8, 1817, by which the Cherokee ceded their lands lying east of the Chattahoochee in Georgia, hence it probably was not very long after that time that the Cherokee abandoned this and various other villages, when their removal first to Arkansas, thence to the present Oklahoma, was commenced. By the treaty of December 29, 1835, all the remaining lands of the Cherokee east of the Mississippi were relinquished to the Government.

[1] Mooney, ibid., pp. 195–196.

[2] Mooney, ibid., p. 29.

[3] William Bartram, Travels through North and South Carolina, and Georgia, etc., p. 372, London, 1792; also Dublin, 1793.

[4] C. C. Royce, The Cherokee Nation of Indians, *Fifth Annual Report of the Bureau of Ethnology*, p. 144, Washington, 1887.

[5] Mooney, op. cit., p. 87.

[6] Royce, op. cit., pp. 219 ff.

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The time when the Cherokee still occupied the Nacoochee valley was within the memory of old inhabitants who have passed away within the last few years, while it is written of George W. Williams, of Charleston, S. C., that in 1823 his father removed from North Carolina to the Nacoochee valley, then "on the very border of civilization, inhabited principally by Cherokee Indians"; and, again, that his father, "who was one of the original settlers here about the time the Indians were driven away, owned a large portion of Nacoochee valley, taught his sons the science of farming; they ploughed up gunlocks, swords, broken shells, bullets, tomahawks, arrows, human bones and the like."[1] The two statements may not be entirely consistent, but they suggest the occupancy of the valley by the Cherokee for a short time after the treaty of 1819. Further evidence that the settlement was not abandoned until well within the nineteenth century is afforded by the finding by us of a Spanish coin of Carlos IV, dated 1808, in the refuse under the northeastern base of the mound.

Although not the earliest account of the so-called "Indian legend" of Nacoochee,[2] that of Williams is probably most responsible for the exploitation of the ridiculous yarn, set forth as of Indian origin, respecting the beautiful Nacoochee and her Choctaw lover Sautee, after whom the two streams bearing those designations are alleged to have been named. The Spaniards of De Soto's army are forced into the romance, and although there is not a grain of truth in the assertion that any Indians ever related such an un-Indian legend, and the entire fabric of the story is imaginary, it has received such currency that no argument can dismiss it from the minds even of those otherwise intelligent. It is not improbable that the myth of the Indian "princess" may have had its origin in the "queen" of Cofitachiqui who ran off with one of the negro slaves of the Spaniards as her husband.

[1] George W. Williams, Relics of a Forgotten Race in Nacoochee, Ga., and Its Surroundings, pp. 70, 95, Charleston, 1903.

[2] See the romance of the "Indian Princess Nacoochee, 'The Evening Star,'" in Rev. George White's Historical Collections of Georgia, pp. 486–487, New York, 1854

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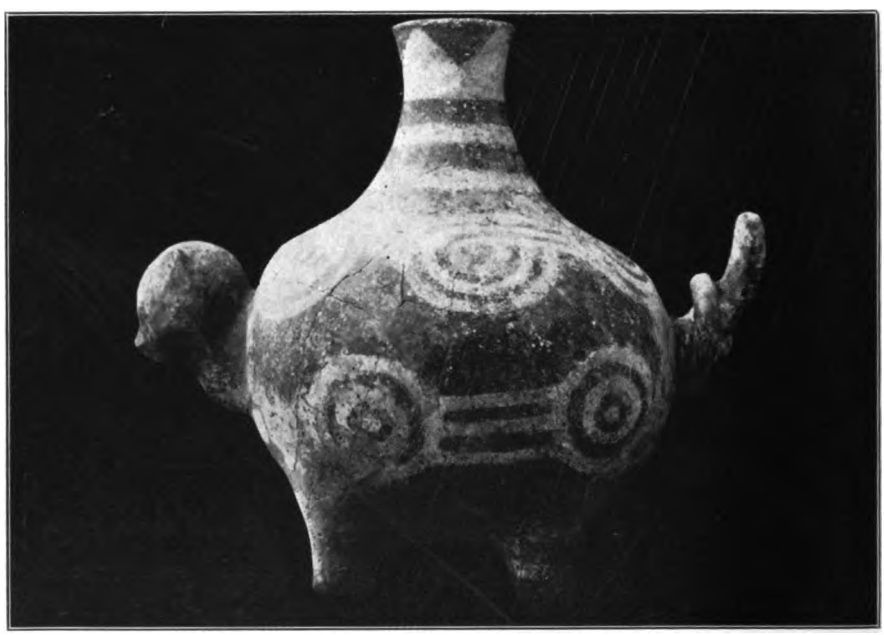

EFFIGY VASE FROM THE NACOOCHEE MOUND

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CHARACTER OF THE MOUND

Fortunately a description of the condition of the Nacoochee mound forty-five years ago was recorded by Charles C. Jones,[1] whose observations are worthy of repetition here for the sake of comparison.

"In the upper part of Nacooche valley, and near its western extremity, is a prominent earth-mound. Located not far from the Chattahooche river, and rising some 20 feet or more above the surface of the surrounding valley, it has long constituted a marked feature in this beautiful region. For many years its slopes and summit have been cultivated, and, within the recollection of the older inhabitants, this tumulus has lost much of its original dimensions. [More or less] elliptical in shape, it has a flat top, declining somewhat toward the southwest. Measured in a northeasterly and southwesterly direction, at right angles, its base-diameters are, respectively, 190, and 150 feet; while its apex-diameters, ascertained in the same directions, do not fall short of 90 and 60 feet. It is entirely artificial, and appears to be wholly composed of the earth gathered from the neighborhood of its base. There are no terraces, the sides sloping gradually from the summit. Tradition has preserved no memories of the people by whom it was erected, and its treasures, if any, are still concealed within its own bosom."

A survey of the mound by Mr Heye and Mr Coffin before excavation was commenced, showed its N.E.–S.W. diameter on the summit to have been 78 ft. and its N.W.–S.E. diameter 67 ft. 4 in., which latter was the minimum diameter of the apex. The maximum diameter of the top, however, was 82 ft. 9 in. from north to south. The shape of the summit is shown in fig. 1, which represents a circumference of about 231 feet. The circumference as measured at the base was 410 ft., while the maximum height of the mound was 17 ft. 3 in. As before indicated, these measurements are of interest only as showing the condition before excavation, and by no means represent the dimensions of the mound at the time of its abandonment. As Jones remarks, there was no sign of a terrace or roadway, such as that which characterized the ancient Guaxule. Little was to have been expected in the way of remains at the surface of the summit, as it was learned from a mechanic who had

[1] Antiquities of the Southern Indians, pp. 213–214, New York, 1873.

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been employed in building the pagoda, still preserved, twenty-seven years before, that about two feet of the top had been removed at that time. Subsequently the sides had been dug away more or

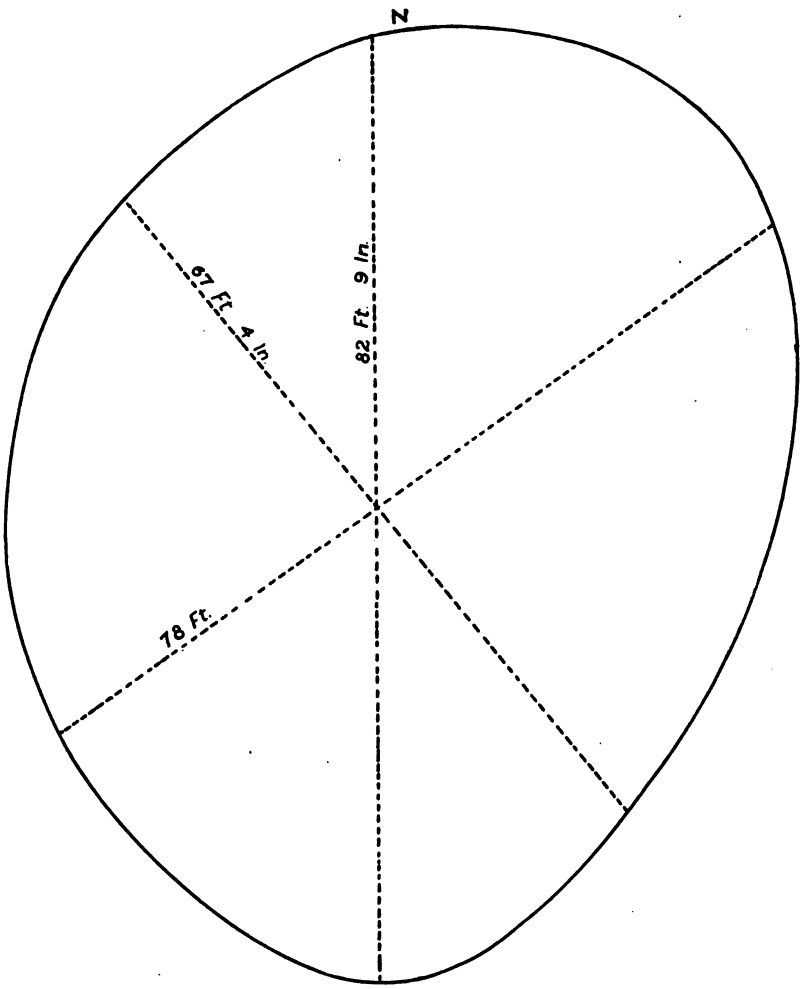

FIG. 1.—Outline of the summit of the Nacoochee mound at the time of excavation.

less, forming a steep conventional terrace which was planted in vines and shrubbery, and the mound fenced.

As mentioned by Jones, the mound is composed mainly of earth

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EFFIGY VASE FROM TENNESSEE

COURTESY OF PROF. L. C. GLENN, OF VANDERBILT UNIVERSITY, NASHVILLE

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taken from the surrounding field, which consists of a rich dark clayey soil containing a considerable proportion of silica and alumina. It was early observed in the course of the excavation that this soil became bright red on contact with fire, the change in color being especially apparent in the numerous evidences of fire-pits throughout the mound. An analysis by Dr Edgar Everhart, chemist of the Geological Survey of Georgia, made by the courtesy of Prof. S. W. McCallie, State Geologist, gave the following result:

Moisture at 100° C.	3.02
Loss on ignition H^2O and organic matter	10.38
Soda (Na_2O)	.64
Potash (K_2O)	2.05
Lime (CaO)	1.00
Magnesia (MgO)	1.80
Alumina (Al_2O_3)	17.77
Ferric oxide (Fe_2O_3)	4.48
Ferrous oxide (FeO)	1.44
Manganous oxide (MnO)	.20
Titanium dioxide (TiO_2)	1.35
Sulphur trioxide (SO_3)	.08
Phosphorus pentoxide (P_2O_5)	.72
Silica (SiO_2)	54.64
Organic matter about 0.50%	
Total	99.57

The purpose of the Nacoochee mound was primarily domiciliary, that is, as in the case of so many earthworks in the South, it was the site of the town-house, the dwellings of the village proper being erected in the surrounding flat land. A glimpse of a typical settlement of the Cherokee in the eighteenth century, before these tribesmen had become greatly modified by contact with encroaching civilization, may aid us in visualizing the conditions existing at Nacoochee at the time of its occupancy. William Bartram, a man of scientific attainments, who visited a number of Cherokee settlements during a journey through the South in 1773–78, wrote as follows on the subject of Cherokee houses, his description, although evidently applying especially to the village of Cowee, situated at the mouth of Cowee creek of Little Tennessee river, in Macon

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county, N. C., being characteristic of Cherokee towns in general.[1]

"The Cherokees construct their habitations on a different plan from the Creeks; that is, but one oblong four square building, of one story high; the materials consisting of logs or trunks of trees, stripped of their bark, notched at their ends, fixed one upon another, and afterwards plaistered well, both inside and out, with clay well tempered with dry grass, and the whole covered or roofed with the bark of the chesnut tree or long broad shingles. This building is however partitioned transversely, forming three apartments, which communicate with each other by inside doors; each house or habitation has besides a little conical house covered with dirt, which is called the winter or hot-house; this stands a few yards distance from the mansion-house, opposite the front door.

"The council or town-house is a large rotunda, capable of accommodating several hundred people: it stands on the top of an ancient artificial mount of earth, of about twenty feet perpendicular, and the rotunda on the top of it being above thirty feet more, gives the whole fabric an elevation of about sixty feet from the common surface of the ground. But it may be proper to observe, that this mount on which the rotunda stands, is of a much ancienter date than the building, and perhaps was raised for another purpose. The Cherokees themselves are as ignorant as we are, by what people or for what purpose these artificial hills were raised; they have various stories concerning them, the best of which amount to no more than mere conjecture, and leave us entirely in the dark; but they have a tradition common with the other nations of Indians, that they found them in much the same condition as they now appear, when their forefathers arrived from the West and possessed themselves of the country, after vanquishing the nations of red men who then inhabited it, who themselves found these mounts when they took possession of the country, the former possessors delivering the same story concerning them: perhaps they were designed and appropriated by the people who constructed them, to some religious purpose, as great altars and temples similar to the high places and sacred groves anciently amongst the Canaanites and other nations of Palestine and Judea.

"The rotunda is constructed after the following manner: they first fix in the ground a circular range of posts or trunks of trees, about six feet high, at equal distances, which are notched at top, to receive into them from one to another, a range of beams or wall plates; within this is another circular order of very large and strong pillars, above twelve feet

[1] Op. cit., pp. 365-366.

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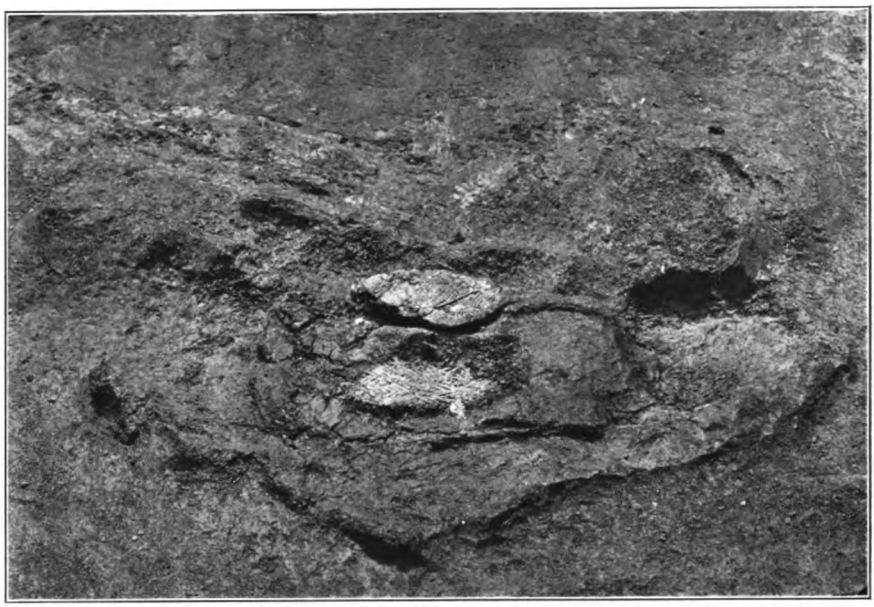

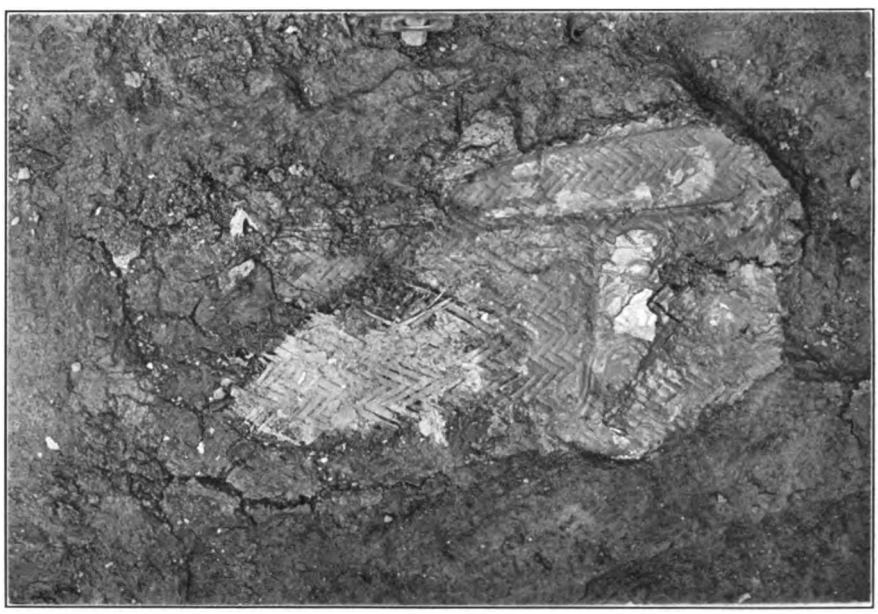

MATTING FOUND WITH BURIAL 46

THE LOWER FIGURE SHOWS THE IMPRESSION OF THE COPPER AXE AND ITS HANDLE BENEATH THE MATTING

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COPPER AXE WITH PART OF ITS WOODEN HANDLE

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high, notched in like manner at top, to receive another range of wall plates; and within this is yet another or third range of stronger and higher pillars, but fewer in number, and standing at a greater distance from each other; and lastly, in the center stands a very strong pillar, which forms the pinnacle of the building, and to which the rafters centre at top; these rafters are strengthened and bound together by cross beams and laths, which sustain the roof or covering, which is a layer of bark neatly placed, and tight enough to exclude the rain, and sometimes they cast a thin superficies of earth over all. There is but one large door, which serves at the same time to admit light from without and the smoak to escape when a fire is kindled; but as there is but a small fire kept, sufficient to give light at night, and that fed with dry small sound wood divested of its bark, there is but little smoak. All around the inside of the building, betwixt the second range of pillars and the wall, is a range of cabins or sophas, consisting of two or three steps, one above or behind the other, in theatrical order, where the assembly sit or lean down; these sophas are covered with mats or carpets, very curiously made of thin splints of Ash or Oak, woven or platted together; near the great pillar in the centre the fire is kindled for light, near which the musicians seat themselves, and round about this the performers exhibit their dances and other shows at public festivals, which happen almost every night throughout the year."

We have already noted the statement by Jones that tradition has preserved no memories of the people by whom the Nacoochee mound was erected, and while Bartram lends support to the mysterious origin of mounds occupied by the Cherokee, there is no doubt that the tribe built and occupied various mounds and that Nacoochee was one of them. On this subject, as well as on the reason for the selection of village sites near streams, Mooney[1] comments as follows:

"The Cherokee town-houses were necessarily located in the immediate vicinity of a stream, and where there was about it a level area. The reasons for this were (1) that the dances were held around and about these public houses, frequently beginning inside, and (2) ceremonial bathing formed an important part of the proceedings connected with their sacred dances, such as the green-corn dance and the medicine dance, where the whole body of the performers came out of the town-house to

[1] Cited by Cyrus Thomas, The Cherokees in Pre-Columbian Times, pp. 63–64, New York, 1890.

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the water, and, after certain ablutions, returned thereto. It was necessary, therefore, that the building be near a stream. As the level areas in their narrow mountain valleys are often overflowed, it is quite probable that in order to place these sacred houses above the floods, they were, as stated in tradition, located on artificial mounds. Moreover, the town-house was the depository of numerous ceremonial objects which could not readily be removed in a sudden emergency. And, as it is said traditionally that a sacred fire was kept burning on a peculiar excavation in the center of the earthen floor, this could not be removed from the hearth-place, and hence some provision for its protection was necessary."

STONE CISTS AND RELATED GRAVES IN THE LOWER LEVELS

The first record of excavation of the Nacoochee mound is found in Jones's work,[1] from which we quote as follows:

"In June, 1870, Capt. J. H. Nichols, while ploughing in the vicinity of this tumulus, discovered, several inches below the surface of the field, a number of large stone slabs. They were lying at a remove of about thirty feet from the western slope of the mound. . . . During the progress of the investigation, he unearthed three stone graves, quite near each other, but not disposed in a uniform direction. These graves were parallelogrammic in shape, being seven feet long, three feet wide, and a little more than two feet and a half deep. They were all filled with earth, and the surface of the field above them was somewhat elevated beyond the level of the surrounding valley. The sides consisted of rough slabs of slate, between two and three feet long, and about two feet wide, set up on end. The bottom of the central grave was paved with oval boulders which had evidently been obtained from the bed of the Chattahoochee. But one of the three—and that the central grave—was covered. For the covering, or lid, flat slabs of stone rather more than three feet in length had been employed; so that when they rested upon the upright sides and ends of the grave, the enclosure of this vault or rude sarcophagus was complete.

"In this central grave a male skeleton, measuring more than six feet, lay extended at full length. Each of the other two graves contained the bones of more than one skeleton lying in disorder, and carelessly piled in without any regard to regularity. It was obvious that these bones were in a detached condition when they were placed in these

[1] Op. cit., pp. 214–215, 223–224.

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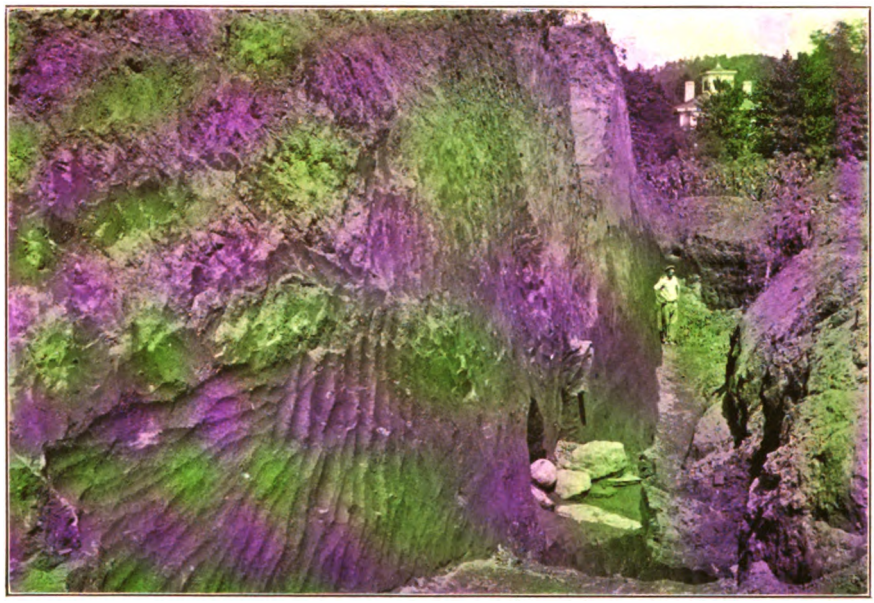

STONE GRAVE (BURIAL 53)

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enclosures. It seemed impossible from them to construct distinct and complete skeletons. When removed from the graves and exposed to the air, most of them crumbled. Further investigation will probably develop the existence of other stone graves of similar construction in this vicinity."

Jones then refers to the occurrence of stone graves in Tennessee, Missouri, and Illinois, adding: "It is perhaps not unlikely that the Chaouanons [Shawnee] constructed many of these Tennessee graves, and, crossing the mountains which intervened, peopled Nacoochee valley and other portions of Georgia."[1] He continues:

"An examination of the stone graves of Nacoochee valley inclines us to the belief that to the prevalence of some such custom as this [reserving corpses for a general inhumation and then stripping them of the flesh for ultimate reburial] are the two graves indebted for the remains of several dead enclosed within them. The lack of order in the disposition of the bones, and the careless commingling of various portions of several skeletons, are evident, while in the central grave the corpse was carefully laid at full length upon the stone flooring. As we proceed, we will perceive additional reasons for conjecturing that this grave formed the receptacle of some chief or warrior of note. He was a man of great stature. The few teeth remaining in the lower jaw were much worn, and the alveolar processes had been greatly absorbed. Unfortunately, the skull was in such a decayed condition that it could not be preserved. . . .

"As we have remarked, each of these graves contained human remains. In the central grave was the skeleton of an old man more than six feet high. This corpse had been carefully deposited upon the floor of the vault, at full length, the arms lying parallel with the body. In the other two graves the bones had been disposed without any regard to regularity. Portions of several skeletons were found in each, and it was evident that they had been inhumed in utter disregard of every thing savoring of order. None of these graves had been disturbed previous to this examination. Although located in a cleared field, which had been cultivated for a number of years, the ploughshare had never before touched the stone covering which sheltered them."

[1] For the distribution of stone graves in the Southern states and for numerous descriptions and illustrations of such remains in Tennessee, see Moore, Aboriginal Sites on Tennessee River, *Jour. Acad. Nat. Sci. Phila.*, vol. XVI, 1915.

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Jones then describes in detail the objects found with the skeleton in the central grave,[1] namely,

1. An implement of pure copper (nearly 10 in. long, 2¾ in. wide at the cutting edge and 2 in. wide at the helve, with an almost uniform thickness of a little less than a tenth of an inch, and a weight of 9¾ oz.) which lay near the shoulder, and beneath it a piece of matting, consisting of thin layers of split cane about a quarter of an inch wide, interwoven at right angles, "probably the remnant of the sheath or basket which enclosed it." Doubtless this cane was *Arundinaria macrosperma* Mx., which grows abundantly along the banks of the Chattahoochee near by. The fragment found showed traces of dyeing, some of the splints being black, others yellow. An inch and a quarter from the upper end of the copper blade, and extending diagonally across it, was a smooth worn space on each side, about 1¼ in. wide, "showing where and how this axe was inserted in its handle. . . . That it had been used is evident both by the abrasion caused by the handle, and also by the fact that the cutting edge is somewhat split and broken." But Jones says the axe is so thin that "it seems scarcely probable that it could have been applied to any general practical uses," although he dwells especially on the abrasion of the copper at the point of contact with the former handle and the splitting and breakage of the cutting edge, which could hardly have been possible if the implement were used only "as a badge of distinction and treasured as a valuable ornament or possession, and not employed as a weapon of war or used for incisive purposes." The surface of the axe "is considerably oxidated, except where it was surrounded by the handle, which would indicate not only that it was attached to the handle at the time of its inhumation, but also that the handle must have consisted of some hard substance. . . . The handle had worn that portion of the axe which it enclosed quite smooth; and this fact, while evincing no inconsiderable use, tended to render such part least liable to decomposition or oxidation. No trace of the handle remained in the grave." It may be said, however, that although there may have been some abrasion at the

[1] Jones, op. cit., pp. 225–238.

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STONE CELT, ARROWPOINTS, SHELL BEADS, ETC., WITH BURIAL 53

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point referred to, the entire celt may have been equally smooth at the time of its burial. In the opinion of Jones (p. 231), "the metal of which the Nacoochee axe is formed was obtained from the shores of Lake Superior, and that probably the implement itself was there made." In this connection we may mention the fact that the Spaniards of De Soto's expedition saw copper axes in use among the Georgia Indians in the sixteenth century.

2. Two specimens of *Cassis flammea*, one of them from the central grave, measuring nearly 10 in. in length and about 7 in. in diameter, from each of which the interior whorls and columellæ had been removed to adapt them for use as drinking-cups or some other form of receptacle. "These conchs," says Jones, "were brought from the Southern Atlantic coast, or from the shores of the Gulf of Mexico."

3. Four small copper rods, which Jones conjectured "may be the spindles alluded to by the historians of De Soto's expedition, with which, when heated, the natives were wont to perforate pearls so that they could be strung and worn as beads."

4. A pin-shaped soapstone ornament, carefully polished, a little less than 2 in. long, with the head rather more than half an inch in diameter. (See pp. 71, 85.)

5. Several shell pins, one of which, about 1¾ in. long, is like a large-headed wrought nail, somewhat similar in form, although shorter and more pointed, to the soapstone ornament mentioned. The other shell pin is rather irregular in shape, with both ends pointed. The pins with heads, Jones says, were made from the columellæ of some big univalve, such as *Strombus gigas*. (See p. 93.)

6. A flat perforated stone, with a beveled aperture, size not given, but perhaps not exceeding an inch in diameter, which Jones believed was suspended as an ornament.

7. An imperforate discoidal stone.

8. A grooved axe badly worn. (See p. 84.)

9. A beautifully polished wedge-shaped axe or celt of stone.

10. A chisel of greenstone.

11. A fragment of a soapstone pipe.

12. A large stone bead.

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These complete the list of specimens taken from the graves beyond the western base of the mound, but in the vicinity were plowed up fifty-five Venetian beads, varying in shape and color, and in addition Captain Nichols found a plain, thin-walled, black slate pipe with the bowl and the stem at a slightly obtuse angle (pl. L, *b*), an earthenware pipe of bird effigy form, and a paint mortar of brown jasper. "No trace of iron, bronze, or steel existed in these graves," says Jones (p. 237). "The presence of the copper axe and stone implements furnishes good ground for believing that their owner had enjoyed no opportunity for exchanging his rude weapons and ornaments for the more serviceable tools which, at an early period, were freely offered by the colonists. This fact, and the total absence of the old Venetian beads found in the neighborhood, and undoubtedly once the property of the Indians, enable us, with considerable confidence, to assign to these graves an antiquity of not less than three hundred and thirty years.[1] Probably they are much older."

So much for the objects found at the Nacoochee site forty-five years before the excavations conducted in 1915. We have dwelt at length on Jones's observations for the reason that they relate to artifacts associated with the earliest period of the occupancy of the site, as well as to graves and their accompanying objects similar to those uncovered during the progress of our own work and at the same level, although at the opposite side of the mound.

We may preface the description of the circumstances attending the finding of the stone graves and their contents at the eastern base of the earthwork by explaining that the excavation of the Nacoochee mound was commenced at the summit by the removal of a stratum of the soil four feet deep, excepting the middle part occupied by the summer-house (pl. II, *b*). This finished, a second stratum of four feet was removed, and so on until, at the eastern side, it was possible to reach the very base of the tumulus without danger to the workmen by caving of the bank. At the same side,

[1] The author here evidently had in mind the occupancy of Nacoochee at the time of De Soto in 1540.

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SECTION OF THE REMAINS OF THE GREAT FIRE-PIT NEAR THE MIDDLE OF THE SUMMIT

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10 ft. 6 in. below the summit level, was exposed the top of the first stone-box grave, 5 ft. 10 in. in maximum length, 3 ft. in maximum width, 22 in. in height, and bearing N.E.–S.W. (pl. III). This sepulcher (Burial 34) contained the greatly decomposed remains of the skeleton of an adult, headed N.E., extended on the left side. The grave was partly filled with earth which had sifted in owing to pressure that had forced the grave stones forming the western side inward and those of the eastern side outward, causing the covering slabs to fall partly into the enclosure. That this grave had been constructed long before the mound acquired its maximum height is certain, as the strata immediately above the western side of the grave was undisturbed, showing that the cist had been placed only slightly beneath the surface at the time it was built. The bottom of the grave was floored with slabs of stone. Under and projecting rearward from the neck of the skeleton was a completely flattened shell, apparently part of a conch, of the consistency of lime, within which was a piece of micaceous schist; and in the same condition were two small univalve shell beads found about the position of the right ear. No other artifacts were found in this grave.

About four feet east of this grave, but at a depth of 17 ft. 5 in. from the summit of the mound to the bottom of the grave, and 14 ft. 9 in. beneath the slope (*i. e.*, about 5 ft. deeper than Burial 34), was another stone-box grave (Burial 39), measuring only 4 ft. 7 in. by 3 ft. 10 in., by 2 ft. 6 in. in maximum height (pl. IV). The inside measurement of this grave was 3 ft. 10 in. long by 2 ft. 5 in. wide. In some respects this interment was the most interesting of the many uncovered at Nacoochee, by reason of the finding, among other objects, of an earthenware effigy vessel of painted ware, the only specimen of painted pottery, with the exception of a small sherd recovered from the same section of the mound and at approximately the same depth, found during the entire exploration. The body had been laid on its right side, with the head directed eastwardly, on a layer of bark placed on the earthen floor. The bones of the trunk had almost disappeared through decay, but were sufficiently traceable to indicate that the body had been bowed

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greatly outward, while the upper leg-bones, which were in somewhat better condition, were flexed strongly upward and the lower leg-bones lay against the pelvis. This distortion was evidently necessary because of the small size of the grave. The skull, which was of the consistency of cornmeal owing to decay and the ravages of insects, lay in the upper left-hand or northwest corner of the cist.

When the top of this grave was encountered, it was found necessary to remove a large mass of superposed soil before it could be examined, and this was of such qauntity as to require an entire day's work. Covered with earth for protection over night, some boys visited the spot and in their play jumped on the grave from the bank above, displacing the stones covering the top and breaking into pieces the effigy vase to which reference has been made. This vessel, which was found seven inches east of the left clavicle, hence at the rear of the body, is of porous, shell-tempered ware, écru in color, on which has been applied a whitish slip, ornamented in brown with four connecting triangles at the rim, three continuous bands on the neck, immediately beneath which, surrounding the upper part of the body, is a series of connected spirals, separated below by a field of brown from a band of concentric circles interspersed with horizontal bars, followed by another area of brown above the legs. The vessel, which probably contained water when deposited in the grave, has been repaired (pl. v), and measures 9⅜ in. in height by about 6½ in. in diameter exclusive of the appendages. The head, which projects midway of the globular body, is round, with short flattish ears; the eyes are indicated by almost indiscernible knobs surrounded with painted bands; the nose is rather prominent, being accentuated by a depression at each side, but is not well defined between its tip and the mouth; the mouth is a shallow, horizontal slit three-quarters of an inch long, and recedes in such manner as to make the animal chinless; the neck is stout, with an almost goiter-like swelling in front and banded with vertical brown lines. Painted diagonal lines of brown extend from the ears to between the eyes, where they meet the brown area that accentuates the nose. The tail, which was made with a roll of clay one end of which was inserted in an aperture pierced in the

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SECTIONS SHOWING STRATIFICATION OF THE EASTERN PART OF THE MOUND

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body before firing and then spread inside by pressure while still plastic, curves upward, but protruding from just beneath the tail is another appendage, of somewhat lesser diameter, which curls upward and then over and under the tail, meeting itself about three-quarters of an inch beyond the point of beginning, as if to give the impression of a knot. The tail also has been painted brown, but the pigment is so worn as to have the appearance of mere daubs. The legs of the quadruped are stubby, being only about an inch long, and merge into the body; they were painted with brown stripes, much of which has worn away. What animal the maker sought to represent is not known. The tail suggests an opossum and the head a wildcat.

A vessel almost identical in form and design, but a couple of inches shorter from head to tail, was found in 1890 in a stone grave on the Bosley farm about four miles west of Nashville, Tenn.[1] So close is the resemblance of the two vases as to lead to the conclusion that they were derived from the same people and that the one found at Nacoochee was intrusive. This Tennessee vessel is here reproduced (pl. VI) through the courtesy of Prof. L. C. Glenn of the Department of Geology of Vanderbilt University, Nashville, Tenn., in which institution this interesting receptacle may now be seen. Another effigy vessel of the same type, from near Lebanon, Tenn., and now in the Peabody Museum of Harvard University, is about eight inches long and of the same height.[2]

Against the shoulder of the effigy vase found by us was a well-preserved conch, from which the columella had been removed evidently for the purpose of transforming the shell into a cup and which was slightly broken from the same cause that resulted in the breakage of the effigy vessel. About the neck of the skeleton

[1] G. P. Thruston, Antiquities of Tennessee, pp. 152–153, Cincinnati, 1890. Ramsay (Annals of Tennessee, pp. 78–79, Philadelphia, 1853) says: "The late General Robertson learned from the Indians that more than a century and a half ago, (1665,) the Shawnees occupied the country from the Tennessee river to where Nashville now is, and north of the Cumberland, and that about 1700, they left this country and emigrated north." And again, "In 1714 Monsieur Charleville opened a store where Nashville now is, occupying as a dwelling a fort which the Shawnee had built there."

[2] Eleventh Annual Report of the Peabody Museum, p. 359, fig. 55, Cambridge, 1878.

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were found seven drilled pearls, still retaining some of their nacre. In the soil beneath the skeleton were several small unrelated potsherds and three small rude stone discs which probably had no direct relation to the burial; and the same may be said, no doubt, of a broken ear-plug of pottery found beneath the pelvis. Beneath the feet were three imperfect hammerstones. Outside the grave, six inches from its northwest corner, was an unfinished discoidal stone, similar to many found throughout the progress of the excavation.

Another noteworthy burial (No. 46), evidently that of an adult, was found only a few feet southeast of Burial 39 and at about the same level, namely, 14 ft. 6 in. below the slope of the mound, with the head probably directed southwestward. So wet was the ground in which this grave was encountered that when it was partially uncovered it was necessary to bail away the water that rose to the surface. As in many other instances at Nacoochee, this skeleton was in such an advanced state of decay that it was not possible to follow its course with exactness or even to determine the form of the bones with the exception of the femora, which showed a slightly curved surface, the others having been completely flattened by pressure and become virtually a part of the bark lining of the grave. It was from the position of the femora and the shape of a certain area discolored by decayed vegetal matter that the direction of the skull was conjectured, although the traceable bones covered a space of only 22 inches in length.

The first indication of the presence of this grave, which was not encased in a stone cist, was given by the upturning of a fragment of bark at a point very near water-level, at what proved to be the middle of a layer of this material covering a space of 9 by 15 in., surrounding which, as well as the remains of the skeleton, was the area of black, decomposed vegetal matter, probably also bark, irregular in shape but measuring 3 ft. 7 in. by 3 ft. 2 in. maximum. On lifting the preserved bark covering, there was found adhering to the under part a fragment of coarse fabric (fig. 2), and beneath this a piece of matting (pl. VII). Between the matting and the fabric were fragments of thin sheet-copper, the salts of which

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A. STONE DEPOSIT ADJACENT TO BURIAL 6

B. STONE DEPOSIT ASSOCIATED WITH BURIAL 9

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had preserved the textiles. This copper ornament was found to be in the shape of the torso and arm of a human figure, but unfortunately it was so disintegrated as to be beyond recovery, except in small pieces. Embedded in the under-surface of the bark covering,

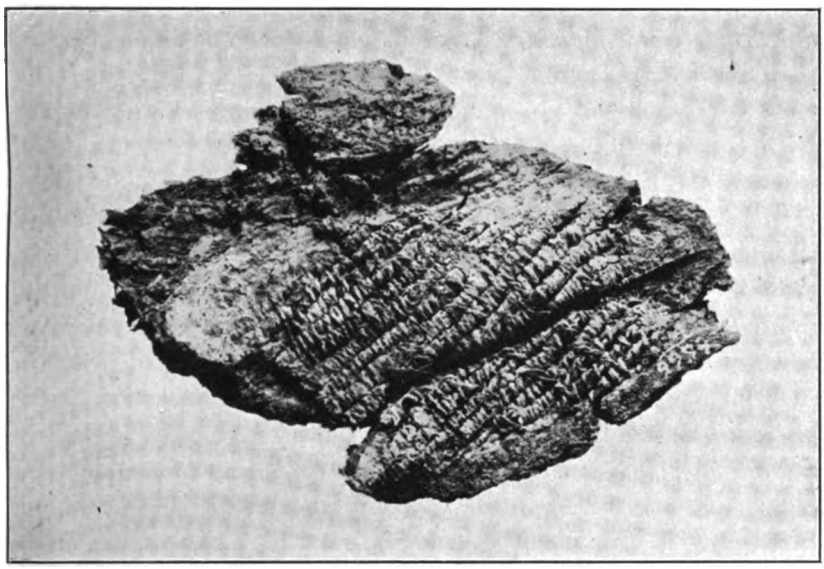

FIG. 2.—Detail of matting with Burial 46.

a few inches west of the matting, was a copper celt,[1] with a part of the wooden handle still in place (pl. VIII); this likewise had rested on the matting. Beneath the celt, other very thin pieces of a sheet-copper ornament were found, including one representing the claw of a bird, but these also crumbled on exposure. The matting on which the celt rested plainly showed the impression of the implement and its wooden handle, and it was possible to preserve the entire mass. So far as could be determined, the celt and the sheet-copper ornaments had been deposited with the matting and the fabric about the position of the pelvis.

It will be observed that the method of depositing this celt on

[1] As employed in this paper the term "celt" must be understood as applying to that class of ungrooved implements, whether of copper or of stone, that had been hafted for use in the manner of axes or hatchets. See pages 82–84.

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the matting in the grave is generally similar to that of the copper implement placed in the stone grave unearthed in 1870 by Captain Nichols near the western limit of the mound, as previously described. The celts themselves, however, differ somewhat in form as well as in size, the Nichols implement (the whereabouts of which is now unknown) being almost a third longer (nearly 10 in. in length) than the specimen found by us, which is 7¼ in. long, by 1 in. wide at the poll and 1½ in. near the cutting edge. Moreover, the Nichols celt is flaring at the blade-end and squarish at the other, whereas the celt in the Museum of the American Indian, Heye Foundation, tapers gradually and regularly from end to end and is slightly rounded at the poll. Again, the Nichols celt is less than one-tenth of an inch in thickness throughout, while the other averages about three-sixteenths of an inch. A feature in common, however, is the angle at which the two celts were hafted—each in such manner that the under angle formed by the insertion of the blade in the handle (when viewed as shown in pl. VIII) is slightly acute. Of course, in the case of the Nichols implement, one can judge only by the impression left by the handle on the blade. Interesting in this connection is the fact that two of the stone celts (p. 83) found by us in the mound show that they had been hafted in the same manner and at relatively the same angle. There is no evidence of lashing on the handle of the copper celt found by us, the two narrow bands crossing the blade being splints from the matting. The recoverable portion of the wooden handle of the celt is well preserved, thanks to its contact with the copper of the celt and the sheet-copper ornaments. While the original length of the handle is unknown, it evidently was quite short in comparion with the length of its blade, if we may judge by the taper of the remaining portion.[1]

The matting found in association with the celt is of diagonal plaiting which forms a pattern in parallel rows. The first strand of each group of four passes under the fourth transverse strand met by it, the second of the group passes under the fifth, the next

[1] A similar celt is mentioned and illustrated by Moore, Certain Aboriginal Remains of the Black Warrior River, *Jour. Acad. Nat. Sci. Phila.*, vol. XIII, 1905, p. 154, fig. 27.

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A. BURIAL 2 WITH ITS ACCOMPANIMENTS

B. BURIAL 3, SHOWING COPPER ARM-BANDS

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the sixth, and so on, but always preserving the under-four over-four order. The strands or splints, which average an eighth of an inch in width, were probably rather loosely plaited, and are of tough fibrous material like split cane. Adair's description of the Cherokee baskets is generally applicable to the matting found by us. He says: "They divide large swamp-canes into long, thin, narrow splinters, which they dye of several colours, and manage the workmanship so well, that both the inside and the outside are covered with pleasing figures." [1]

There is no indication that the specimens of matting found by us were ever colored, in which respect they differ from the basketry found by Captain Nichols and described by Jones. Another point of difference in the textile found in the two parts of the mound is the technique, the Nichols specimen[2] showing a rectangular, irregular plaiting so far as it is possible to determine from such a small example.

The fragment of textile found with Burial 46, shown in fig. 2, has been examined by Miss Mary Lois Kissell, who pronounces it to consist of a binding element of twisted two-ply fiber on a foundation also of twisted but different fiber. The binding element is wrapped around the foundation in coils, the segments thereof being stitched at intervals of about half an inch. The fabric has been so coated with copper salts that its true character is determined only with difficulty, nor can we hazard a reasonable conjecture as to the use to which it was put, unless it served as a bag. No indication of coloring is traceable.

Another stone grave (Burial 53) was encountered in the eastern portion of the mound, at a depth of 16 feet (pl. IX). The skeleton, which lay flexed on the right side, was directed N.E.–S.W., the skull toward the N.E. The body had been covered with earth, on which seven large flat stones were placed, and on these the bowlders, the whole being covered with bark. Only one of the flat stones was on edge when the grave was uncovered. The skeleton had been laid on bark, which had almost completely decayed. Resting in the

[1] James Adair, History of the American Indians, p. 424, London, 1775.

[2] Jones, op. cit., p. 225, pl. VI, 1.

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bend of the left arm was a stone celt, which lay parallel with the axis of the body, the cutting end toward the feet. On the poll of the celt were 10 small arrowpoints, and at the side a number of large shell beads and the wooden core of an ear-ornament (pl. x and fig. 63). Beneath this celt and its accompanying objects were another celt and 35 more arrowpoints, the second celt lying immediately beneath the other and pointing in the same direction. As in the case of the others, these arrowpoints rested on the blunt end of the celt which they accompanied. Over this deposit of celts, arrowpoints, and shell beads, was a hard black incrustation which formed a shell-like pocket in which the objects lay. Northeast of this deposit, and almost touching it, was another small depression, similar in material, coated with a layer of greatly decayed shell or bone. In the center of this pocket were a number of lobe-like elevations, covered with white material similar to the decayed bone or shell described. Still another pocket was found northeast of and almost touching the skull; in it was a fragment of a shell bracelet. Projecting from beneath the skull were a large stone celt and a smaller one (pl. LVI, *d*, *e*), the latter perforated at the narrower end.

Under one of the stones covering the grave, pieces of the shells of hickory-nuts, chestnuts, and squash seeds were found; and just above one of the grave-stones was a large arrowpoint.

No other burials in stone-box graves were found in the mound, the deposits of stones in association with burials nearer the summit not being regarded as such. These will be described later.

The occurrence of these graves and their contents, not to mention others, on both the eastern and western bases is evidence of the unity of culture of the inhabitants of Nacoochee long before the mound had reached its ultimate height, for, as will be shown later, the earthwork was no doubt in process of erection during a long period. The presence of such mortuary objects as copper celts, matting, a sheet-copper ornament, etc.,—objects not found in the upper portions of the mound where conditions for their preservation were more favorable—indicate more or less of a change in the culture of its inhabitants, due possibly to the influence of civilization.

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A. BURIAL 4 WITH ITS ACCOMPANIMENTS

B. GRAVE 47, AN EXAMPLE OF A GREATLY FLEXED BURIAL

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We will now characterize the features pertaining to the construction of the mound as exhibited by the excavation, especially of the eastern side (in which section the work was particularly concentrated), leaving the other graves for consideration later.

FIRE-PITS

It has already been shown that about two feet of the summit of the mound had been removed in recent years. Human bones are said to have been found in the process of removal, but of their character nothing is now known, and of course the conditions incident to the summit itself are no longer possible to determine.

In removing the uppermost four feet of the mound as it existed when the work was commenced by us, we discovered the remains of an extensive fire-pit, the top of which reached to within six or seven inches of the surface of the mound, north of its center. This pit, shown in plate XI, aggregated 8 ft. 9 in. in diameter. Careful observation of the pit showed that it actually consisted of a series of smaller pits, more or less fused, that had been used successively; then as the earth of the mound had been renewed from time to time and the fire-pit then in use had been covered with earth, another was formed above. This earth covering of the successive pits had burned red, as was always the case when fire had come in contact with the black soil of the mound, as before described. At a depth of 4 ft. 3 in. beneath the surface, directly under the fire-pit, was a thin layer of charcoal, and four inches below this was another, each extending a foot beyond the limit of the fire-pit at the south and seven feet beyond it at the north, as if the remains of a shelter, or of two shelters, that had been erected on the summit of the mound at the time it had reached only to that height. These thin charcoal strata are faintly visible at the very bottom of the vertical wall in which a section of the fire-pits is shown. Immediately above them, showing in the illustration as a thick, dark stratum below the lighter material of the fire-pits themselves, were several ill-defined strata of bright-red clay. The fire-pits themselves were completely filled with gray wood-ash, so indurated as to be almost of the consistency of cement concrete, containing small

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pieces of charcoal and stone, and a few potsherds, including the crested head of a bird that evidently had formed part of a smoking pipe, as well as a pipe of steatite. Near the southern border of the fire-pits was a post-hole, dug in recent times through the hardened ash.

We have already noted that, according to Cherokee tradition, a sacred fire was kept burning on a peculiar hearth excavated in the center of the earthen floor of the town-house, which was built on a mound. It would seem that the great fire-pit near the middle of the summit of Nacoochee represented the remains of one of these sacred places.

Throughout the mound, at varying depths, were numerous other evidences of fires, in some cases very small, in others occupying from one to two cubic feet or more, and in every instance filled with gray ash and wholly or partly surrounded with reddened earth. These fire-pits were significant in that by far most, if not all, of them had been made in the surface of the mound as it existed at the time, showing that the mound had been formed by gradual accretion.

A few feet northwest of the large fire-pit, covering an area approximately 8 ft. square, were the charcoal remains of a layer of reeds lying rather regularly in an east-west direction, with burned poles, about 2½ in. in diameter, extending in the same direction as well as transversely. Over parts of the charred mass, which was 2 to 3 in. in thickness, was a layer of red-burned earth of about the same thickness as the charcoal, and under other parts was a similar layer, the whole evidently being the remains of a shelter of pole-and-cane construction.

Another fire-pit, in the southwestern section of the mound, was found 4 ft. 2 in. below the summit; it was 22 in. in circumference at the top, but tapered to about 10 in. at the base, and was 2 ft. in depth. The top of this fire-pit, judging from the surrounding soil, seemed to have been at the level of the summit of the mound at the time the pit was in use. The pit was entirely filled with a mixture of red-burned earth and charcoal. From its top downward, on both sides, extended a stratum of gray, sandy clay, as if from

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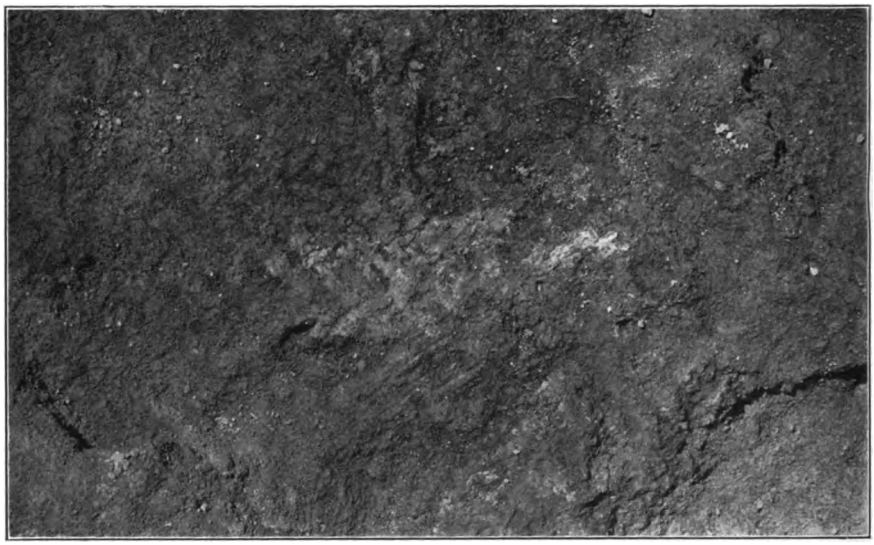
A. BURIAL 48



B. TRACES OF MATTING COVERING BURIAL 50

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the river-bed, for a distance of five feet, or about twelve feet in all. Beneath and around the pit were seven stones, mostly flat, some roundish, ranging in weight from 15 to 40 pounds. No sign of bone or of artifacts was in or near the pit. In this part of the mound there was great paucity of sherds or other refuse.

In addition to a fire-pit found in association with Burial 10 (see p. 41), there was another, 5 ft. 8 in. northwest thereof, measuring about 13 in. in depth by 8 in. in maximum diameter, the top being 19 in. below the mound surface. Spreading from the top of the pit in all directions was a stratum of red-burned earth mingled with ash, two to three feet in thickness. This stratum evidently marked the surface of the mound at the time the fire-pit was in use.

Still another fire-pit was uncovered in the adjacent field, southeast of the mound proper. This pit was 7 in. beneath the surface and was 3 ft. deep. It extended in a N.E.–S.W. direction, was 2½ ft. long, 20 in. wide at one end and 12 in. at the other, and was almost filled with stones, none larger than eight inches in greatest dimension, mostly flattish, and all showing the effect of fire. Beneath the stones was charcoal, and scattered through the earth adjacent to the stones were numerous potsherds and flecks of charcoal. Also beneath the stones was a bone of pasty consistency measuring 1 by 10 in., so decayed as to be beyond identification.

At the eastern base of the mound another fire-pit was unearthed, with three flat stones on top and charcoal and red-burned earth beneath. Both in and under this deposit were many fragments of incised and plain earthenware, some quite large. Some of the charcoal found preserved the shape of poles or small logs, 2½ to 3 in. in diameter and 2 to 3 ft. long. The extent of this fire-place was 6 ft. in length by 15 in. in thickness. The bottom was 20 in. above the base of the mound, as indicated by the undisturbed brownish clay floor. It is not improbable that this place, as well as the one last mentioned, was used for firing pottery. Beneath the fire-place, one foot above the mound base, was a stratum of reddened earth and fine charcoal mixed, in thickness from 8 to 10 in.

A fire-place 12 by 16 in. was discovered in the northeastern side of the mound, 6 ft. 10 in. below the surface. This consisted

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of three flat stones, one still on edge, between them being a mass of charcoal; beneath was a layer of yellow clay, the position of which showed that the fire-place and the superposed earth had settled about six inches from its original position. This fire-place was about six feet south of the point where Burial 70 presumably lay. Extending from a point just beneath the fire-place southward for a distance of three feet was a stratum of charcoal mixed with animal bones and potsherds.

STRATIGRAPHY OF THE MOUND

The evidence afforded by the fire-pits was not the only indication of the gradual building of the mound and of its occupancy at different levels during the process, for throughout the excavation the face of the trenches gave ample testimony that such was the case, the periodical building-up and widening of the earthwork being easily read from the stratification of the successive accretions. Especially was this determinable as the depth of the excavation of the eastern side increased until it reached the original base, 19 ft. below the summit, or nearly 2 ft. lower than the surrounding field.

A typical section exposed 12 ft. east of the eastern rim of the summit and 12 ft. in depth showed the following character:

Commencing at the bottom, above an undisturbed sand layer[1] which contained no charcoal, was stiff, moist, clayey earth, very compact, for a thickness of 22 in., mingled with small fragments of what appeared to be iron-stained clay. Next above was a layer of red-burned earth, 18 in. in length and 3 in. thick at its widest or central part. Above this for an irregular few inches the clayey earth was darker in color. Next, for a thickness of six feet, was a similar deposit of thick, clayey earth, in which were many specks of charcoal; the top of this stratum was eight feet above the sandy base of the mound, and its upper two feet was particularly rich in charcoal, with here and there a particle of red-burned clay or earth. The next four feet consisted of darker soil like that of

[1] It should be remembered that the entire field surrounding the mound has been covered by the overflow of the river even within recent years. It is said that the precipitation in this section of northeastern Georgia is as great as that of any part of the United States.

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a

b

c

EARTHENWARE JARS FROM NACOOCHEE (RESTORED)

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the field, with a fleck of charcoal and bone appearing at intervals. The stratification was not well defined, but was sufficiently plain to show that the dip was toward the outer base of the mound, and seemed to indicate here, as in the face of other trenches where similar observations were made, that the mound had been built at intervals.

Throughout the exposed face of the deep trench in the eastern side, small fragments of earthenware were found, all belonging to the three principal styles of Nacoochee pottery to be described later. No one of these was confined to any particular level or depth, indicating that the stamped ware with straight-line, rectangular, or curvilinear patterns, as well as the incised ware, was synchronous in manufacture. The same may be said of the quantities of sherds found beneath all the slopes of the mound from top to base.

Later in the work, when the excavation had entered the eastern side until its face had reached a depth of 17 ft. 2 in., Mr Pepper observed what had evidently been a smaller mound within the great one. This measured 27 ft. 9 in. in length and 5 ft. 3 in. above a stratum of yellow clay and sand under which burials were found, and which, as nearly as could be determined, had been laid down on the original surface of the ground.

This lesser mound was composed of black soil and yellow sand, so intermixed that the section presented a cloudy appearance, strongly contrasting with the dark-brown soil above. The top of this small mound was 11 ft. below the summit of the great structure, the space between being filled with a semistratified mass whose lines dipped away from what had been the summit of the lesser mound. This overlying deposit was so broken with small pockets of sand and other materials that measurements were not practicable, but the lines conformed with the general contour of the small mound for some distance on each side thereof, then broadened until they became almost horizontal.

The yellow clay at the base, above referred to, varied from 5 to 7 in. in thickness and extended northward from the east–west center line for a distance of 13 ft.; northward farther beyond this point the stratum became sand, whose thickness varied from 5 to 8 in., ending 21 ft. beyond the clay. South of the east–west center

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line the same yellow stratum continued, becoming thinner as it extended southward until it reached an ultimate length of 20 ft.; hence the basal yellow clay-sand deposit was 54 ft. in total length.

Under and through the clay and sandy base referred to were five pockets, the measurements of which are given in the accompanying

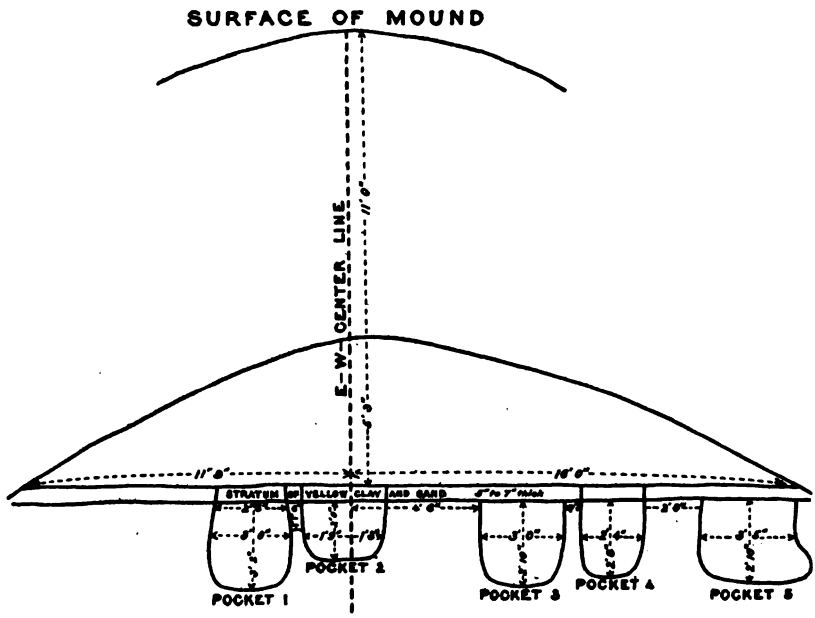

FIG. 3.—Pockets beneath the lesser mound within the larger one.

sectional drawing (fig. 3), and whose character and contents were as follow:

Pocket 1.—This pocket had been cut through the yellow-clay stratum and was crossed by several thin layers of sand. At the bottom were charcoal and burned bones. The center of the deposit was 2 ft. 2 in. S.S.W. from the knee of Burial 54; it was 1 ft. 8 in. in diameter, 2 in. in thickness, and 1 ft. 2 in. below the level of the skeleton. Most of the fragments of bones seem to be non-human, but some of them, notably a piece of skull having the appearance of part of an occiput, may have been human. Owing to the fact that there was a portion of the yellow-clay stratum between pockets 1 and 2, it would seem that these holes had been dug at different

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EARTHENWARE JAR FROM NACOOCHEE (RESTORED)

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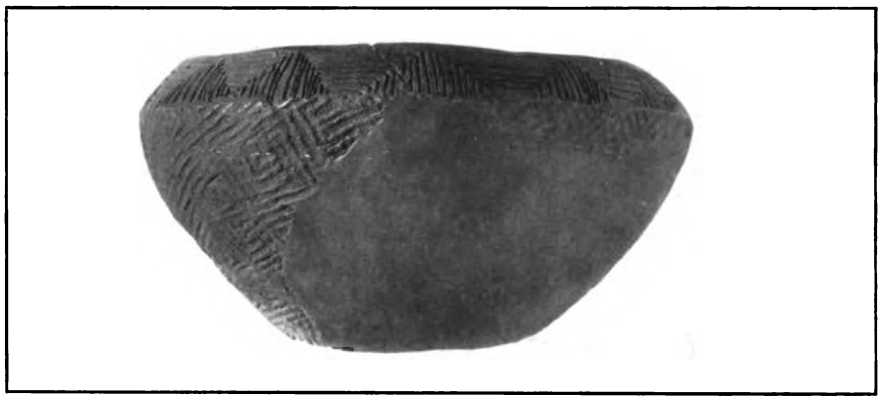

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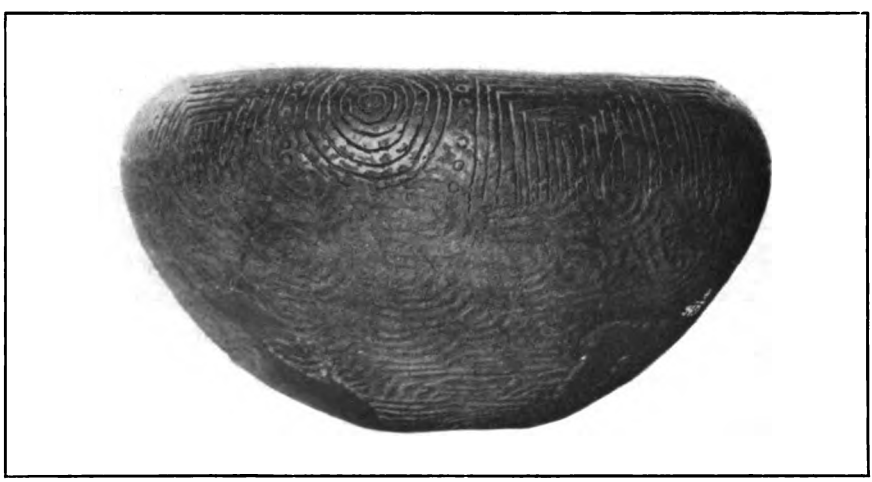

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EARTHENWARE BOWLS FROM NACOOCHEE (A AND C RESTORED)

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times; if so, the bone deposit referred to had no association with Burial 54.

Pocket 2.—Cut through the stratum of clay and adjoining No. 1 on the north, was a layer of yellow clay 6 in. wide, between the upper edges of Pockets 1 and 2, but which became joined 13 in. below the stratum. This pocket was not stratified, but it contained charcoal mixed with the earth and sand, as well as the remains of the skeleton of an adult (Burial 54) which had been interred in a N.E.–S.W. direction, headed N.E., with body flexed, as determined by the relative positions of the pelvis, leg-bones, and skull, all in very fragmentary condition. The grave had been lined with bark. This grave was 18 ft. below the summit of the mound.

Pocket 3.—As shown in the sectional sketch, this pocket was covered by the undisturbed clay stratum, and as in the case of Pocket 1, it was stratified with light and dark sand. No objects were found in this pocket, nor any signs of a burial, but owing to the fact that the human remains found in the other pockets had almost disappeared through decomposition, it is possible that there had been a burial in this one also. If the burial of a child, it would have been one of only two found in the lower section of the entire mound.

Pocket 4.—This had been cut through the yellow-clay layer and contained a strong admixture of the yellow clay and earth. Found therein were the greatly decayed remains of a skeleton (Burial 55), probably of an adult, represented only by a discolored area in which were parts of a skull and teeth, the former at the northeastern end of the grave. The burial was without accompaniments and lay 18 ft. beneath the mound summit.

Pocket 5.—The top of this pocket lay beneath the yellow stratum, which here was of clay and sand. The contents consisted in part of a mixture of yellow clay from the stratum, and soil, especially in the southern upper corner, together with sand and earth containing a sprinkling of charcoal. Also found in this pocket were a leg-bone and part of a pelvis—all that remained, in recognizable form, of the skeleton of an adult (Burial 56). No artifacts accompanied these remains.

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Adjoining Pocket 5 and extending six feet north of it, beneath the yellow stratum (which here was wholly of sand), was a discolored area containing charcoal, some yellow clay, and a few small, dissociated pieces of bone, probably animal. This discolored deposit was 2 ft. 10 in. in thickness. In the central part of the area, within a foot of the northern side of Pocket 5, a small stone celt was found. The earth in this deposit exhibited no discoloration such as was usually seen when a burial had been present. South of Pocket 1, beneath the sand stratum which formed the continuation of the yellow-clay layer, the ground was discolored and likewise contained some charcoal.

Another section was carefully noted by Mr Pepper in the northeastern part of the mound at an average depth of 17 ft. Here the base consisted of a stratum of stones, mostly rough pieces but also some bowlders, none very large, extending N.N.E.–S.S.W. for a horizontal distance of 25 ft. 6 in., with a thickness averaging 2 ft. The stones rested on a layer of bark, some of the pieces of which

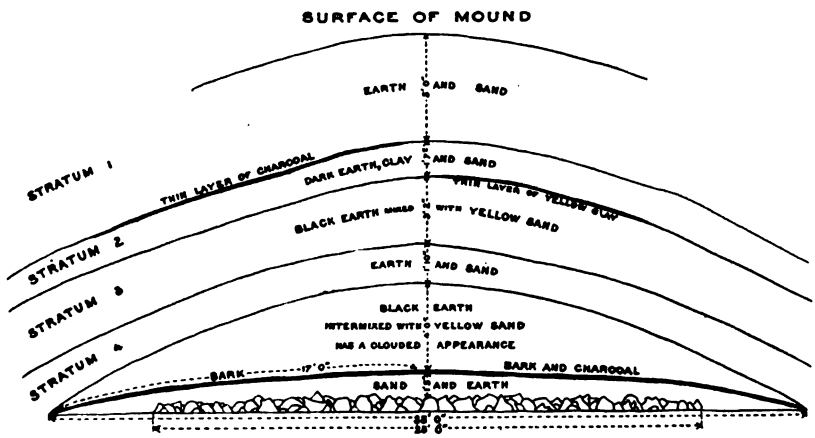

FIG. 4.—Section of the mound in its eastern portion, showing stratification.

were an inch in thickness, which in turn lay on a five-inch stratum of yellow sand, below which was a mixture of sand, clay, and charcoal. This seemed to have been the original level of the ground. (See pl. XII.) At the northern end of and about 18 in. lower than the stone layer, a fragmentary jar with stamped decoration was

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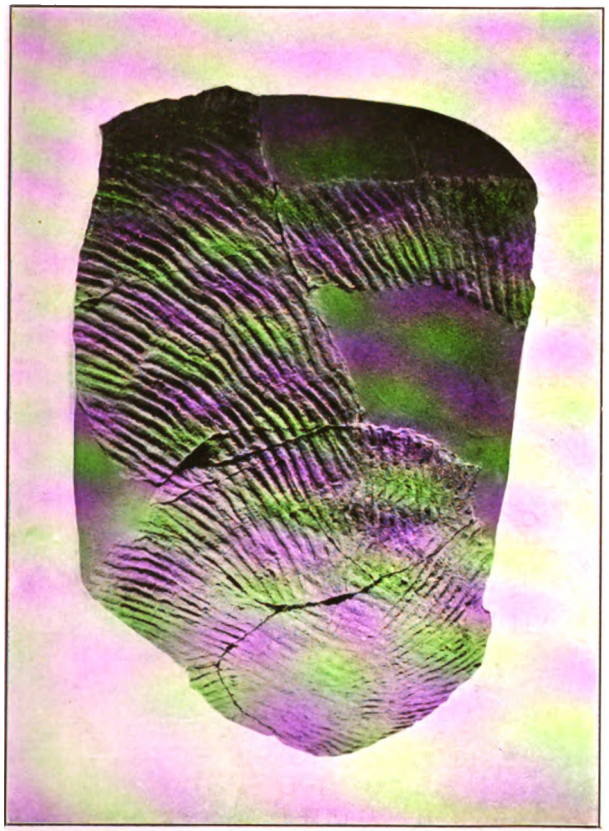

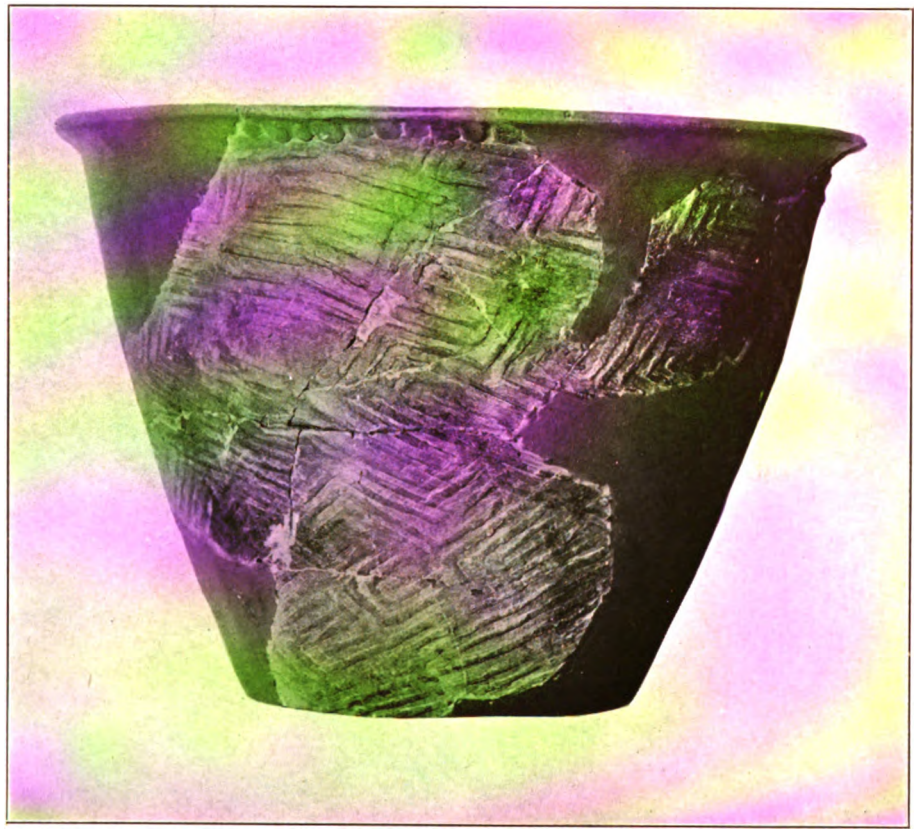

EXAMPLES OF JARS TAPERING TOWARD THE BOTTOM (RESTORED)

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found, the largest sherd being 18 ft. below the surface of the mound. This fragment was surrounded by a mass of charcoal and animal bones, as well as portions of other vessels. Directly over the stones was a layer of bark and charcoal, curved in section, the ends of the deposit resting on the end stones and extending about five feet beyond them in each direction, while the central part was a foot above the stones, with earth between. The appearance of the strata above the stone layer was generally similar to that of the exposed section containing the burial pockets previously described; that is, they indicated a small mound whose base rested on the layer of yellow sand. The composition of this lesser mound above the stones and the upper bark deposit was black earth intermixed with yellow sand, giving it a cloudy appearance; it was 4 ft. high, conical in section, the sides tapering rather regularly until they reached the base formed by the upper bark layer, which was 35 ft. in extent. Next above this mound-like deposit was a stratum of sand and earth, 1 ft. 10 in. in thickness at the apex, but broadening toward the bottom. The next stratum above consisted of black earth mixed with yellow sand, 3 ft. 2 in. thick at the apex, with a thin layer of yellow clay extending from the apex down its northeastern slope for about 12½ ft. Next above was a layer of dark earth, clay, and sand, almost level at the center (where it was 1 ft. 7 in. in thickness) and toward the southwest, but still sloping considerably at the northeast. This stratum was marked along the top of its southeastern half by a thin layer of charcoal. Above this, to the summit of the mound, the deposit consisted of earth and sand to a depth of 5 ft. The stratigraphy of this lesser mound and of the subsequent fillings above is shown in the accompanying sketch (fig. 4).

STONE DEPOSITS

Allusion has been made to deposits of stones encountered throughout the excavations, some of which had the appearance of graves.

Perhaps the most significant of these was uncovered a few feet east of the center of the summit and four feet deep. The stones were not arranged in any particular order (pl. XIII, *a*), and they did

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not have the appearance of once having formed a box grave like the cists uncovered at the lower levels of the eastern side of the mound. No human remains were found within the space covered by the stones, but scattered at intervals, especially near the eastern end (the stones had an E.–W. trend) were several fragments of bones, presumably of a deer. Ten inches west of the stones, however, was the skull of an adult (Burial 6), all of whose bones were completely flattened into a pasty mass; yet it was possible to determine that the remains had been placed on the right side, with the head directed eastward and with knees flexed. No artifacts accompanied the burial, and there was no direct evidence that the stone deposit and the burial were related. Above the skull was an eastern pocket of the great fire-pit before described, which at this point was 19 in. in diameter at the top and 18 in. in depth, the bottom extending to within 18 in. of the skull, but evidently the pit had no association with the burial. The pit contained wood ash, particles of charcoal, and small fragments of red-burned earth. Immediately above the mouth of the fire-pit was a clay flooring, two inches in average thickness and extending a couple of inches beyond the rim of the pit at each side.

Two feet north of the skeleton was a mass of red-burned earth intermixed with charcoal, extending throughout which, for a length of 3 ft., was a charred beam or pole, 1 in. to 2½ in. in diameter, over which, separated by a thin layer of red-burned earth, was a mass of charred grass, in places half an inch thick, for the greater part laid longitudinally. It may be conjectured that this burned material represented the remains of a thatched house or shelter that stood on the mound at a time its summit was below the present level.

Generally similar to this stone deposit was another, found 4 ft. 6 in. below the summit, the stones being arranged as shown in plate XIII, *b*. The extreme length of the area covered by the stones, which extended in a N.E.–S.W. direction, was 9 ft. 7 in., and the maximum width 5 ft. Under the upright stone showing in the rear center of the photograph was a rough, flattish stone, disintegrated by fire, on and about which was a mass of charcoal and

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SMALL, CRUDE JAR WITH PUNCTATE DECORATION FOUND WITH BURIAL 10. HEIGHT 5¼ INCHES

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ashes; and under and about another stone, about the middle of the deposit, were several fragments of a smoke-blackened cooking-pot of incised ware, with a quantity of charcoal under and about them. South of and adjoining the southernmost stone of the deposit was a well-defined flooring of red-burned earth, its upper surface smoke-blackened, covering about one foot square. Indeed, the entire ground covered by the stones had been burned before the stones were placed, as fragments of charcoal and of red-burned earth were mingled with the dark earth beneath the stones. Some of the stones had been fractured as if by heat, and two of them were much crumbled from the same cause. Removal of the stones exposed slight traces of a human burial, including fragments of the crowns of two teeth (Burial 9).

Another deposit of stones, generally similar to the last two described, but not associated with even a trace of skeletal remains, was uncovered in the northeastern part of the mound, 14 ft. 6 in. below the surface. This deposit consisted almost exclusively of slightly water-worn or weathered stones, among which was some charcoal. There was nothing to indicate the object of the deposit.[1]

A deposit of stones 13 ft. beneath the surface of the eastern section of the mound was similar to the last except that the stones were larger. The largest and uppermost stone was a bowlder that had been fashioned into a mortar; under it was a layer of yellow-clay 8 in. in thickness, on a base of black earth 4 in. thick, both strata increasing in width toward the southeast. Twenty inches south of the bowlder-mortar and 18 in. below it was a heavy flat stone, 22 x 14 x 4½ in., in a slanting position. East of the stone last mentioned was a heavy deposit of large pieces of charcoal, while surrounding the stones and scattered through the dark layer beneath the clay were animal bones, some of which were calcined or smoke-blackened, mixed with which were potsherds and an arrowpoint. From his observation at this point, Mr Pepper concluded that house refuse had been thrown here at a time when it

[1] Merely for convenience of record this stone deposit was tentatively noted in the field as Grave 11.

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was the slope of the mound. It was noted that the strata of material composing the mound here trended southward.

A stone deposit was found in the southwestern side of the mound, at a depth of 10 ft. This consisted of a bowlder of irregular form, 13½ x 6½ x 5 in., and, 22 in. southwest of it, a fragment of a flat stone, 11 x 8½ in., with broken edges. Just west of the bowlder, 3½ in., commenced a formless mass of animal bone measuring 9 x 4½ in., by 4½ in. thick, but irregular in shape and with a hard coating such as has been already noted in connection with other decayed bone at Nacoochee. Fifteen inches southwest of this mass was another, smaller but of similar composition. Small pieces of bone mixed with charcoal were scattered through the deposit.

Five inches north of the northern end of the stone stratum near the base, referred to on page 34, and two feet above it, were four stones, three water-worn, the other irregular in shape, all laid horizontally. These were deposited outside the dark "small-mound" area described, but just above it. Nothing was found with them, and there seemed to have been no connection between these stones and the stone stratum at the base. In the southeastern section of the mound, 16 ft. in depth, was a large grooved stone, standing on end, with only charcoal in association.

BONE DEPOSITS

A mass of bone that appeared as if it had been burned, together with the usual charcoal, was found at a depth of 16 ft. in the southeastern part. The bone had the appearance of having been partly decomposed, and, possibly with a mixture of shell, had formed a coating on the surrounding soil similar to that noted in connection with the pockets found with Burial 53. No artifacts were found in this deposit.

At a depth of 17 ft., in the eastern portion, a mass of animal bones was found in a much decayed condition, but identifiable as those of a canine, probably a fox. The bones were disposed in such manner as to indicate that the animal had been buried with some degree of attention. Nothing was found with them.

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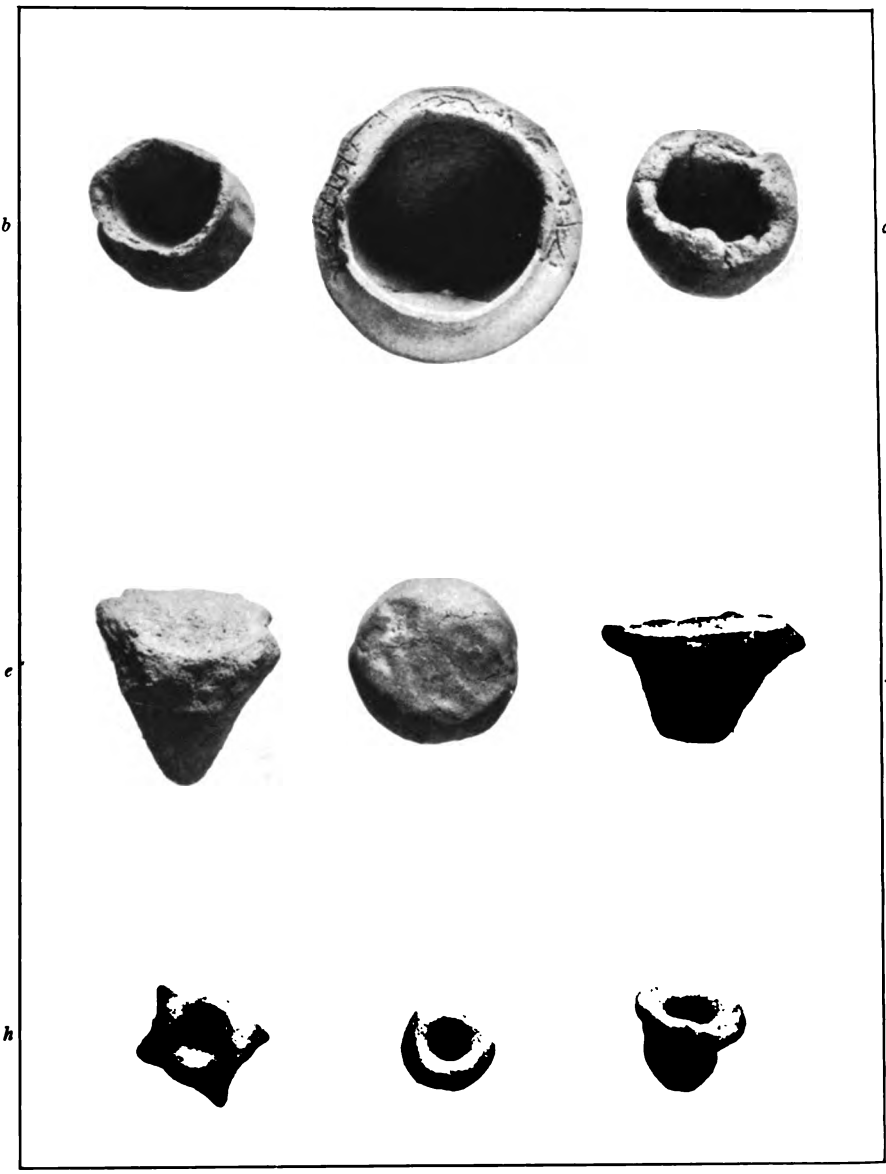

EARTHENWARE OBJECTS

a–c, *g–i*, TOY VESSELS. *d*, *f*, KNOB HANDLES FROM UTENSILS. *e*, DISCOID

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A deposit of burned bones was found 19 feet in depth in the northeastern section, extending N.E.–S.W., and covering a space 8 x 17 in., by 2 to 2½ in. in thickness. The bones had been calcined to such an extent as to have become broken into small pieces. On the middle of this deposit, separated from it by a thin layer of earth, was a round, flat stone, 6½ in. in diameter and 1¼ in. thick, showing evidence of slight use.

In the southeastern part of the mound, 9 ft. deep, was another deposit of animal bones, mostly of deer, that had been buried as a mass. Charcoal was scattered through the immediately adjacent soil.

Reference to stray bones found throughout the mound will be made in describing the bone artifacts.

HUMAN BURIALS

The features of the mound and its more or less unusual contents having been referred to, we will consider the burials of a more commonplace character. In all, seventy-five burials were unearthed, none of which was in a state of preservation to enable measurement, and all of them indeed were so greatly decayed as to be entirely beyond recovery.

Burial 1.—(Depth 2 ft. 9 in.) A small child, directed E.–W., head to E., extended on back. Entirely decayed excepting a few teeth, a clavicle, a fragment of the lower jaw, and parts of a few ribs. The bones that had retained their form were protected by what had evidently been a breastplate consisting of large shell beads. A string of smaller shell beads, by which the breastplate had been suspended, was found under the jaw; among these were two shell hair ornaments. About one foot southwest of and six inches above where the skull had been, were four discoidal stones, irregularly placed. Traces of charcoal were above and beneath the burial.

Burial 2.—(Depth 2 ft. 9 in.) Adult directed N.N.E.–S.S.W., head to S., lying on right side, knees flexed upward, hands in front of face. Bones generally soft, but some of them in fair condition. Under the jaw was a catlinite platform pipe (pl. XLIX, *a*) with the

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stem toward the feet, with Marginella shells in the pipe-bowl but which seemed to have been in a string that had been attached to the hole in the lower part of the pipe. Around the neck was a string of blue glass beads, which likewise seemed to have been attached to the pipe. On and under the scapulæ and pelvis were Marginella and other shell beads that evidently had been fastened to a shirt and leggings. Under the lower leg were two polishing stones and a small piece of ground rock-crystal. Between the knees and the vertebræ were two small stone discoids, one of them, green in color, found hollow-side down, being nearer the spine. Above the remains were traces of charcoal and deer bone, and a few pot-sherds. Under the skull and extending to the scapulæ was a thin layer of ashes, and under the pelvis, mixed with the shells above referred to, was a small, worked, triangular stone. By the feet was a small stone implement (pl. LV, *i*) that probably had been used in modeling pottery. (Pl. XIV, *a*.)

Burial 3.—(Depth 2 ft. 4 in.) Adult, directed S.E.–N.W., head to S.E., lying on face with legs flexed backward so that the feet touched the pelvis. On each upper arm was a broken copper arm-band that had been lined with bark. Under the right jaw was a mass of red paint, and beneath the chest was a breast-ornament consisting of 410 Marginella shell and glass beads. A small, long bird-bone (?) and two bone awls were at the upper part of the vertebræ. Extending from under the left arm-band to the feet was an irregular line of bird-bones, and under the left elbow was a small piece of micaceous stone. Beneath the entire body was a layer of red-burned earth resting on black ashes, evidently indicating that a fire had been kindled over the grave area before the interment was made. The bones of the skeleton were fairly well preserved, but the skull was crushed. (Pl. XIV, *b*.)

Burial 4.—(Depth 2 ft. 9 in.) Adult, directed E.–W., head to E., lying on right side with legs flexed; bones badly decayed and skull crushed. At the back of the scapulæ was a stone pipe (pl. XLIX, *e*), the bowl toward the feet, and beneath the pipe were four glass beads. A copper button lay at the base of the vertebræ, and another, together with two lead buttons, was above the pipe. There

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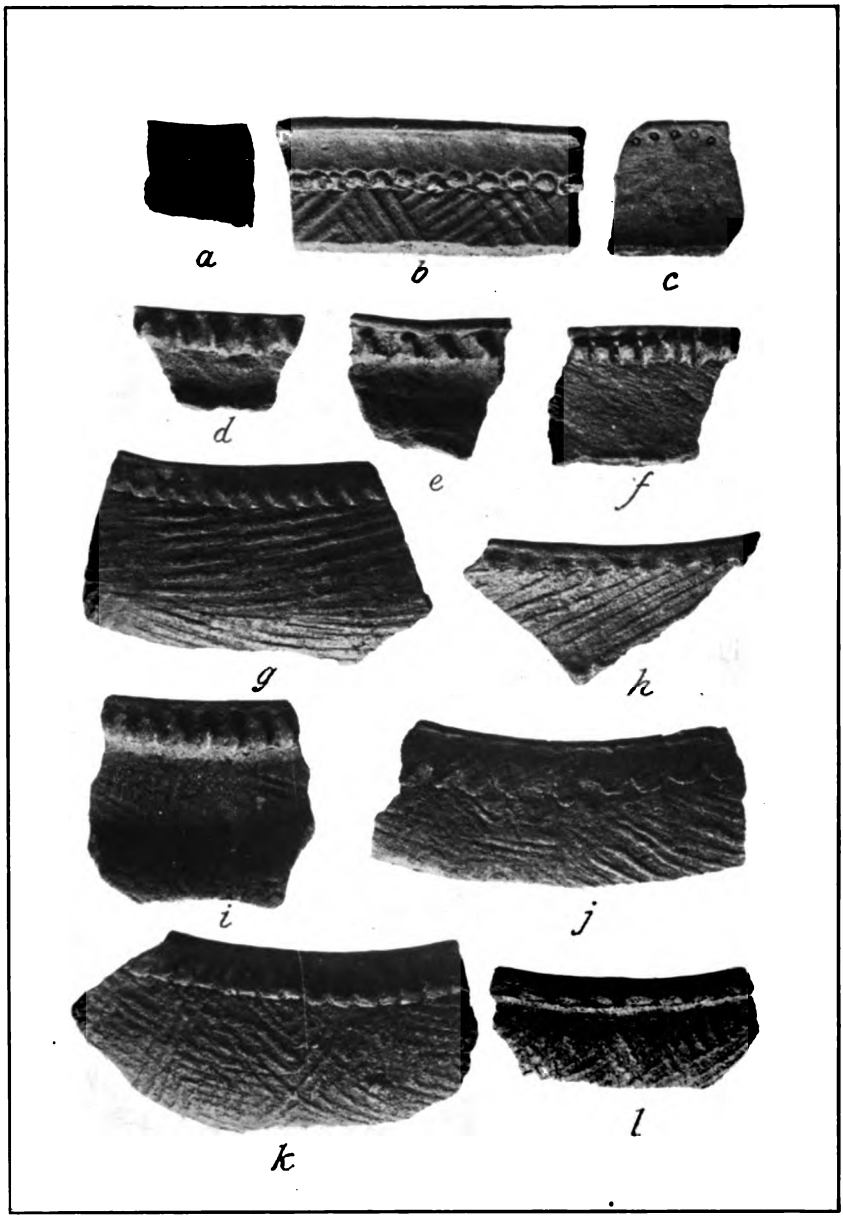

EXAMPLES OF RIMS OF VESSELS

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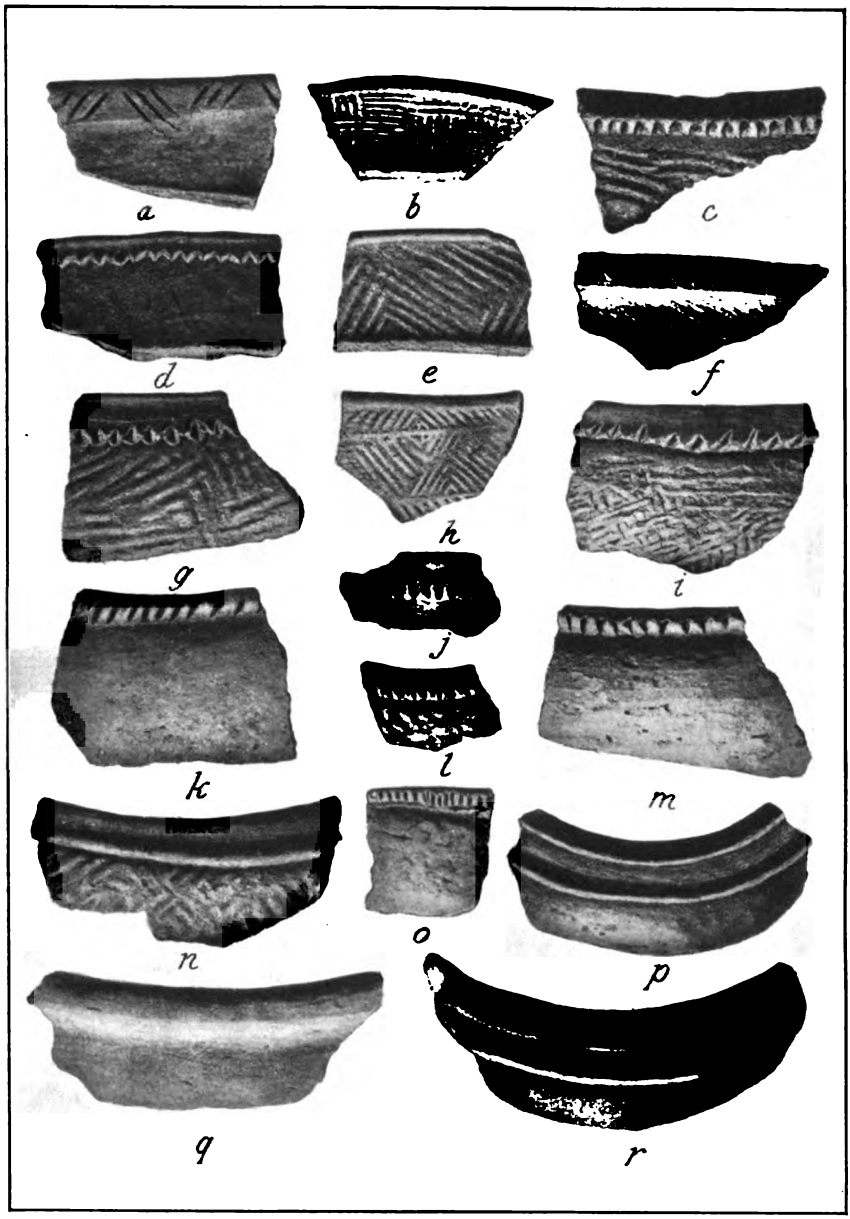

EXAMPLES OF RIMS OF VESSELS

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were also three lead buttons in front of the arms and three more near the feet. This skeleton also had been placed on a layer of red-burned earth, 2 in. thick, beneath which was a stratum of ashes 8 in. in thickness, and another thin layer of red-burned earth. (Pl. XV, *a*.)

Burial 5.—(Depth 3 ft. 8 in.) Adult, directed N.–S., head to N., lying on left side with hands under chin; legs greatly flexed backward so that the feet were against the hips. The skull, and indeed the entire upper part of the skeleton, were greatly decayed, many of the bones having disappeared. Around the neck was a necklace of shell and glass beads, and on one of the knees was a small piece of graphite.

Burial 6.—This burial has already been described in connection with an adjacent stone deposit. See pages 35–36.

Burial 7.—(Depth 4 ft. 5 in.) Adult, greatly decayed, only the teeth being well preserved. The head was directed approximately S., but not enough of the skeleton was traceable to determine whether the body had been flexed. In association with the teeth and the traces of the skull were 21 white shell beads, badly decomposed, varying in length from a quarter to half an inch. Slight traces of baked dark clay lay beneath the skull.

Burial 8.—(Depth 4 ft. 5 in.) Adult, found 5 ft. north of Burial 7. Only traces of the skull and teeth were observable, the remainder having disappeared through decay, except for discoloration of the soil. The burial, however, had been made with the head directed southward and the legs had probably been flexed toward the E. There were no accompaniments.

Burial 9.—This burial has been described in connection with an accompanying stone deposit near the middle of the mound. See pages 36–37.

Burial 10.—(Depth 1 ft. 5 in.) Faint traces of bones only, not sufficient to determine their character or the direction of burial. Accompanying these traces was an entire jar (pl. XXI), standing upright, and immediately back of it, *i. e.*, northward, was a fire-pit, filled with red-burned earth and ash, mostly the former, measuring 13 in. in depth and 8 in. in greater diameter. The top of the fire-pit was 1 ft. 7 in. below the surface of the mound.

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Burial 11.—See page 37, note.

Burial 12.—(Depth 3 ft. 10 in.) This adult skeleton consisted only of traces, which sufficiently outlined the burial, however, to show that it had been flexed westwardly. With the outer shells of some of the teeth was an earthenware pipe, crudely made and without ornamentation of any kind, and a similar pipe lay in close proximity to the spot that had been occupied by the skull. It is evident that this burial had been disturbed by the excavation made when the waterpipe previously referred to (p. 3) was laid. Covering the entire space beneath the skeleton was a layer of red-burned earth and charcoal. Slightly west of where the smoking-pipes were found was a deposit of seven flat rounded stones lying on their sides, beneath which was a pocket of red-burned earth and coarse charcoal.

Burial 13.—(Depth 6 ft.) Adult, direction N.E.–S.W., headed N.E., lying on right side, the right leg flexed at a right angle, the other more extended. The skeleton was in bad condition, none of the bones being firm enough to remove and most of them being represented by little more than soil discoloration. At the neck were a fine leaf-shaped blade of flint (pl. LV, *a*), pointing toward the feet; 15 shell beads of two varieties, in a compact group, not in line as if the remains of a necklace; a shell disc or gorget, in three pieces, perforated as if for suspension, on which rested the flint blade and the shell beads; and an awl-like implement of antler, resting on the blunter end of the blade, but which evidently had not served as a handle.

Burial 14.—(Depth 6 ft.) Adult, on right side, skull directed E., arms flexed upward. Only half of the skeleton remained, and that in very bad condition. On the left forearm were the disintegrated fragments of a conch, the columella remaining, and a fine slate knife, 8¼ in. in length (pl. LVI, *b*).

Burial 15.—(Depth about 6 ft.) This adult skeleton also was greatly decayed, the skull being flattened to a pasty mass, but it was directed eastward. At the neck were two small univalve shell beads, too far decomposed to enable preservation.

Burial 16.—(Depth 8½ ft. beneath the slope and 18 ft. below the summit.) Adult, on right side, head toward E., legs flexed and

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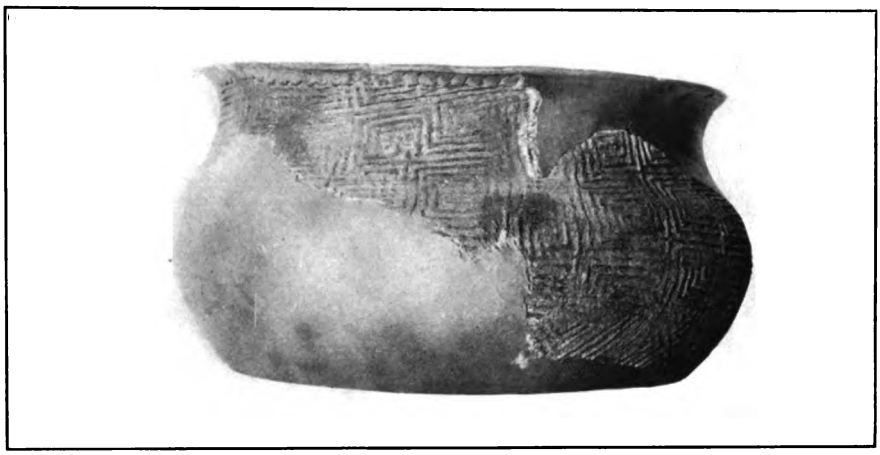
a



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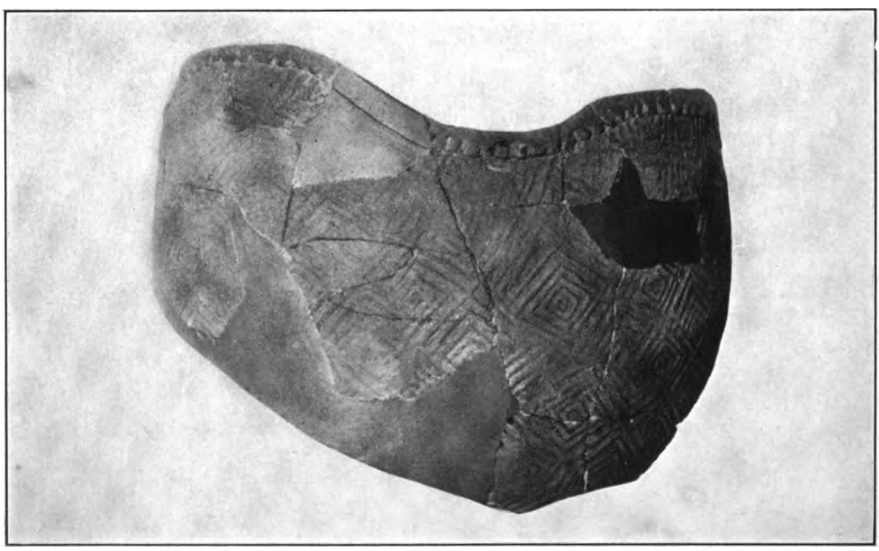

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arms drawn up at acute angles. The bones, which were little more than of the consistency of putty, lay on undisturbed brownish clay, the original base of the mound. There were no accompaniments.

Burial 17.—(Depth 9 ft. beneath the N.E. slope and 18½ ft. below the summit.) Adult, head directed S.E., legs and arms flexed as in the case of Burial 16, bones of pasty consistency. Faint traces of charcoal were found in the earth about the skeleton, but there were no artifacts. The burial lay on the sand of the original valley surface, almost directly above Burial 16.

Burial 18.—(Depth 7½ ft. beneath the slope and 19 ft. 2½ in. below the summit.) Adult, the skeleton being represented by little more than streaks of color, while the bones best preserved were as soft as the sand in which they had been interred. The grave, which had been made in pure sand, was outlined by a discolored area measuring only 3 ft. 2 in. by 2 ft., throughout which were particles of charcoal. The body evidently had been buried in the pit in a sitting posture. No artifacts whatever accompanied the remains.

Burial 19.—(Depth 10 ft.) Skeleton of adult, badly decomposed, lying on right side, skull directed E., the hands before the face; the lower right leg drawn up almost against the upper, the left leg extended almost straight outward from the body; the vertebræ had disappeared, and there was almost no trace of ribs or of the smaller bones. The burial was made entirely in sand on a gravelly bed, the sand being so wet that it could be readily molded in the hand. There were no accompaniments.

Burial 20.—(Depth 11 ft.) Adult, badly decomposed, skull directed E., arms at sides; upper legs outward at right angles with the trunk, lower legs flexed. On the skull and around the body were patches of charred material resembling bark. The burial lay on sand, which had been discolored by contact. No accompaniments.

Burial 21.—(Depth 3 ft. 10 in.) A child, lying on the left side, head directed N.E.; lower legs flexed backward, so that the entire grave, which was well defined by the dark soil caused by the de-

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composition of the body, occupied a space of only 2 ft. 6 in. by 15 in. The remains were badly decomposed. There were no accompaniments.

Burial 22.—(Depth 4 ft. 10 in.) Child or adolescent, bones greatly decayed, only part being traceable. It lay on the left side, head directed N.E. Above the neck were four small shell beads, greatly disintegrated, and about the position of the left ear was a portion of what had the appearance of a shell ear-plug or possibly a hair-ornament, of limy consistency. On the chest lay a celt of slate, 7½ inches in length. This skeleton lay only 21 inches west of Burial 21.

Burial 23.—(Depth 3 ft. 10 in.) The skull of this adult skeleton lay only 17 in. N. from Burial 21, the measurement being made from center to center of the two skulls. Of the remainder of the skeleton, the leg-bones and part of the pelvis were found 3 ft. west of the skull, evidently having been removed in digging the grave for Burial 21, and then reinterred, since if the body had been buried so that the head was directed eastward, as seems to have been the case from the position of the skull, it must have overlapped Burial 21. No artifacts were found with this skeleton.

Burial 24.—(Depth 5½ ft.) Adult, head directed E.; legs sharply flexed backward, body on left side. The skull was greatly decomposed, no teeth were traceable, and little of the trunk remained. There were no accompaniments.

Burial 25.—(Depth 5½ ft.) A child, skull only, in very bad condition, the teeth being represented only by their crowns. Possibly the remainder of this skeleton was dug away by a workman before its discovery. The body had been buried in an E.–W. direction, the skull pointing eastward and resting on its right side. Interment had been made in compact sandy clay, 14 in. above a sandy stratum. No mortuary objects were present.

Burial 26.—(Depth 7 ft.) The badly decomposed skull and only traces of the skeleton of an adult which lay on the left side, head directed eastwardly, with slight traces of shells about the neck.

Burial 27.—(Depth 10 ft.) The skull and the leg-bones of this adult skeleton were the only parts remaining, and these were dis-

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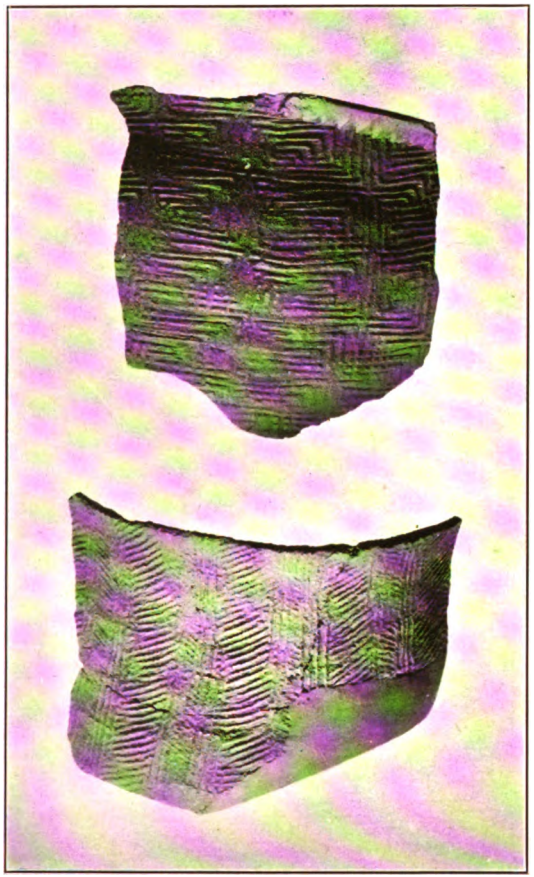

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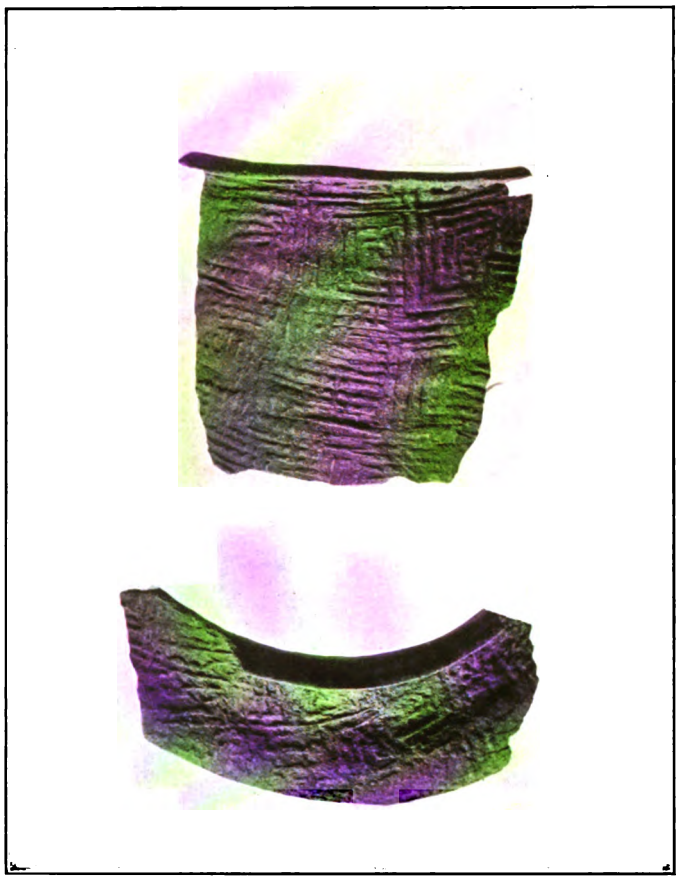

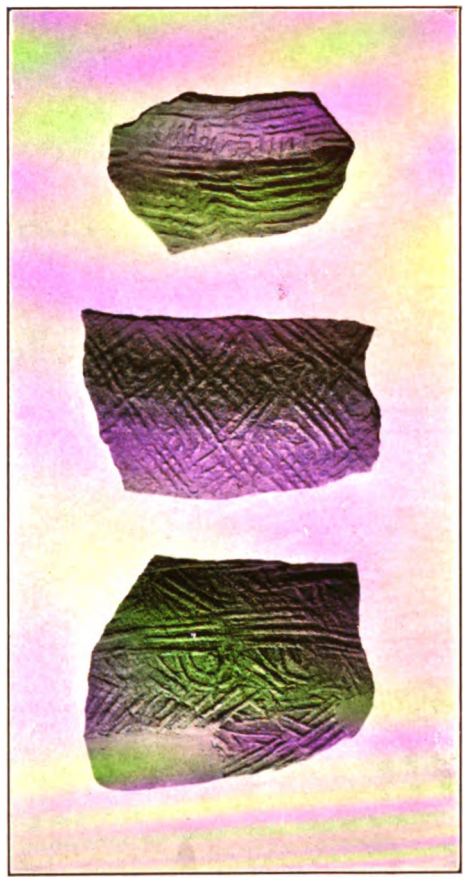

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integrated from decay and the skull crushed. The body seemed to have been buried on its left side, as nearly as could be determined from the faint traces of the bones of the trunk. The skull pointed eastwardly; the legs were greatly flexed. There were no accompaniments.

Burial 28.—(Depth 5 ft.) This insignificant burial had no accompaniments. The skeleton lay on its right side, the skull, completely flattened, directed eastwardly. The bones of the trunk were merely traceable and the leg-bones were hardly distinguishable.

Burial 29.—(Depth 4 ft. 6 in.) This skeleton was sufficiently preserved to show that the skull was directed in a southerly direction, but its condition was so poor that it was not possible to determine any flexion. There were no artifacts.

Burial 30.—(Depth 3 ft. 7 in.) This adult had been buried with the head toward the northeast, but only the leg-bones, part of the vertebræ, and faint traces of other bones, probably arms, were visible, the skull being completely missing. A rude hammerstone was with the remains, but as many such were found throughout the mound, it probably had no direct association with the burial.

Burial 31.—(Depth 6 ft. 3 in.) The remains of this burial consisted of the skull and a clavicle of an adult. The skull lay on the left side, and had been directed eastwardly when the interment was made. There were no artifacts.

Burial 32.—(Depth 10 ft.) Adult, lying on left side, skull directed E.N.E., the body so flexed that from the hips downward the bones trended N.W.–S.E. The skull lay 8 in. lower than the body, the hips and knees being elevated to that extent, except that the skull was greatly flattened by pressure and decay. There were no accompaniments. The earth in which interment had been made contained many small pieces of charcoal and a few small potsherds, and the burial was above the sand stratum in which other burials in the vicinity were unearthed. A thin stratum of yellow clay, not exceeding five inches in thickness and extending over a length of seven feet, lay above the skeleton. This clay had been deposited purposely, as it occurred above the mound base and had been dug through in making the grave.

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Burial 33.—(Depth 9½ ft.) Adult, lying on left side, headed N.E., legs strongly flexed backward. A shell bead and a shell pendant or other ornament probably made from the columella of a conch, lay below the former position of the right ear. The skull was entirely flattened.

Burial 34.—This burial has already been described in connection with a stone grave. See page 19.

Burial 35.—(Depth 10 ft. 6 in.) Adolescent, head directed S.W., the first instance of such. The leg-bones were flexed rather sharply backward. There were no accompaniments.

Burial 36.—(Depth 5 ft.) Adult, lying on right side, head directed N.E., legs flexed at an acute angle. This skeleton, which was greatly decayed, had no artifacts in association.

Burial 37.—(Depth 11 ft. 6 in.) Adolescent, lying on its right side but directed eastward, knees drawn closely to front of body. So greatly flexed was this badly decomposed skeleton that the length as it lay was only 2 ft. 10 in. There were no accompaniments. This burial was directly on the sandy base of the mound, a foot lower and partly under Burial 35.

Burial 38.—(Depth 10 ft.) Adult, greatly flexed, the head to the S.E. and the feet toward the N.W., the lower legs drawn backward against the pelvis. The axis of the grave was 20° east of north. There were no accompaniments.

Burial 39.—This burial has been described in connection with a stone grave. See page 19.

Burial 40.—(Depth 8 ft.) Adult, directed E.–W., with head to E. The body (only the skull and a humerus remained) lay on its right side on sand at the base of the mound. No artifacts were found in association.

Burial 41.—(Depth 14 ft.) Adult, directed N.E.–S.W., head toward N.E. The flexed body was on its right side, but the skull rested on the occiput. The underlying stratum was of mixed clay and sand. The legs and pelvic bones were in a better state of preservation than the skull, which was crushed and of the consistency of putty. Under the shoulder there was a layer of carbonized material, averaging half an inch in thickness, which included

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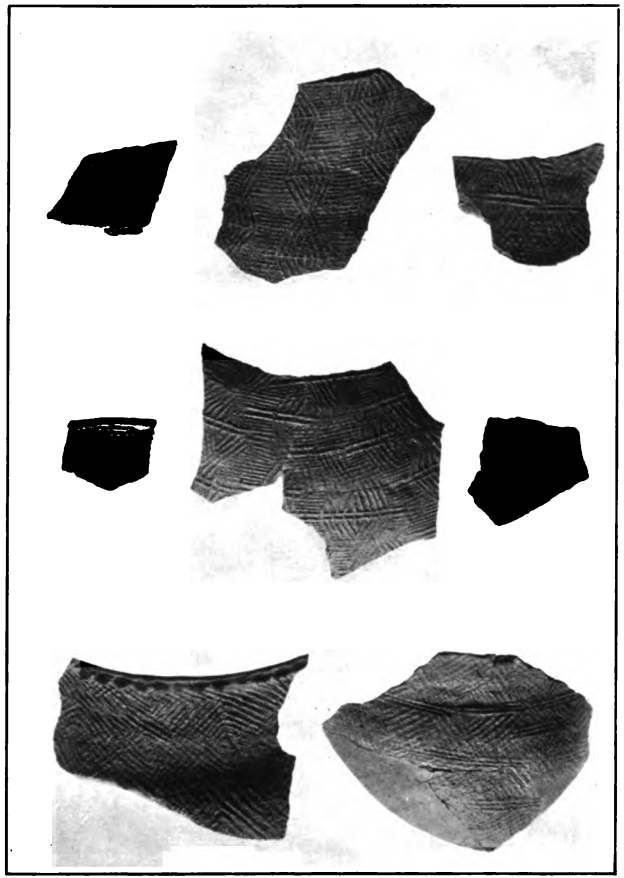

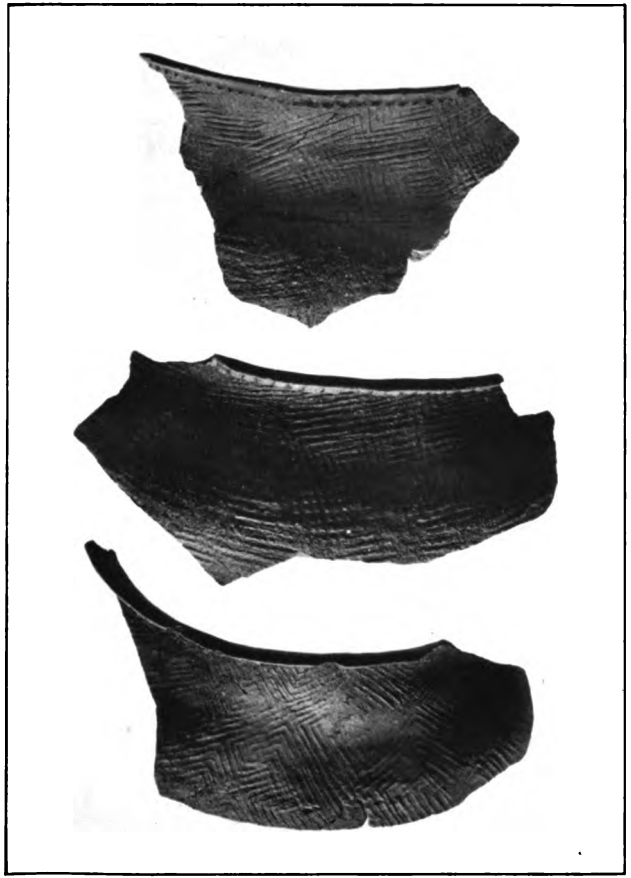

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small sections of twigs. Near the pelvis was a fragment of a small earthenware vessel that seems to have had no immediate association with the interment.

Burial 42.—(Depth 14 ft. 6 in.) Adult, direction S.E.–N.W., the head directed S.E.; body flexed, on right side. Most of the bones, including the vertebræ, were definable. Nearly touching the top of the skull was a portion of the lower jaw of a deer, and near it a piece of quartz crystal and a bear-tooth.

Burial 43.—(Depth 10 ft.) Adult, directed N.–S., the head toward the S. The body lay on its left side and was flexed. Only the crushed skull, a portion of the pelvis, and the femora retained sufficient form to enable identification, but there were traces of other bones. Beneath the skull a small piece of shell was found, and near it a round piece of graphite and a small piece of rock crystal.

Burial 44.—(Depth 14 ft.) Adult, directed S.E.–N.W., with head toward S.E., body extended on back, face upward. The lower parts of the femora had completely disappeared, and there was no trace of the bones of the lower legs and feet. Just above the pelvis were two pipes, one of earthenware, the other of stone, the former resting on the latter. Near the pipes were several small pieces of mica, and a small mica flake was found near the chin. Six inches below the pelvic arch, between the femora, was a flat unworked stone that probably had no immediate association with the remains.

Burial 45.—(Depth 9 ft.) Adolescent, extending S.E.–N.W., the head directed S.E., face upward, body flexed. The skull and the femora were the only bones remaining; the former extended at right angles to what had been the axis of the body. On the bottom of the grave was a number of very small pebbles, placed there evidently by design. Three feet southwest of the knees of the skeleton, and about 18 in. lower down, was a large stone celt, which evidently had not been deposited with this burial.

Burial 46.—This burial has been described in connection with the deposit of the copper celt, etc. See page 22.

Burial 47.—(Depth 10 ft.) Adult, extending S.E.–N.W., flexed so that the head and face were directed S.W. The body was so bent

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that the knees almost touched the nasal bone. The bones were fairly well preserved, the ribs being firm enough to enable the separation of the earth from them—an unusual condition at Nacoochee. The body lay on its left side, the left humerus parallel with the body. This arm was flexed, the fingers resting on the skull. Two small pieces of shell were found near the neck. (Pl. XV, *b*.)

Burial 48.—(Depth 9 ft.) Adult, N.–S., head toward N.; body lying on left side; legs and arms greatly flexed, the elbows almost touching the knees and the hands resting under the chin. The skull was crushed and the other bones were too soft for removal, the vertebræ and the ribs being indicated only by light patches in the darkened soil. On the lower vertebræ was an earthenware pipe, broken into nine pieces (pl. XLVI, lower left-hand figure), probably at the time the grave was filled, as a stone large enough to have caused the damage was found nearby. (Pl. XVI, *a*.)

Burial 49.—(Depth 7 ft. 10 in.) Adult, directed N.E.–S.W., head toward N.E., face down. The upper part of the body was extended and the arms rested at the sides. The skull, pelvis, and leg-bones were crushed and parts of them were decayed, and there was no trace of vertebræ or ribs. The femora were slightly angulated and the lower leg-bones bent upward. Nothing was found immediately with the burial, but two feet south of the well-defined grave area a fragmentary jar was unearthed, with the neck part upward, partly filled with black material solid enough for preservation. The extent of the disturbed earth was indeterminate, but it may have extended beyond the darkened soil immediately beneath the skeleton, hence the jar may have been designed to accompany this burial.

Burial 50.—(Depth 12 ft.) Adult, directed N.E.–S.W., head toward N.E.; body flexed, the knees being bent upward, touching the arm-bones. All the bones were greatly decayed and crushed. On the chest were the remains of a piece of matting (pl. XVI, *b*), beyond preservation. Near the body were a few very small pieces of shell. A number of animal bones mixed with charcoal were scattered through the earth surrounding the burial, which contained also a number of small chips of white and rose quartz.

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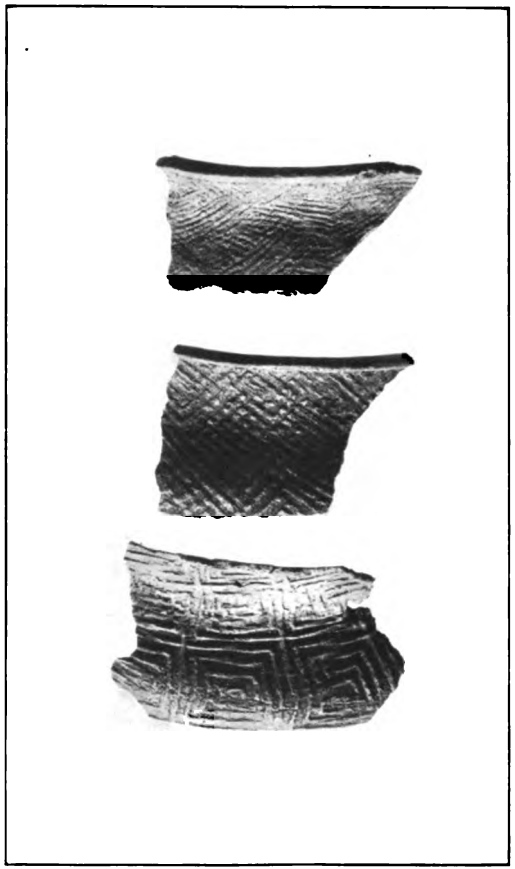

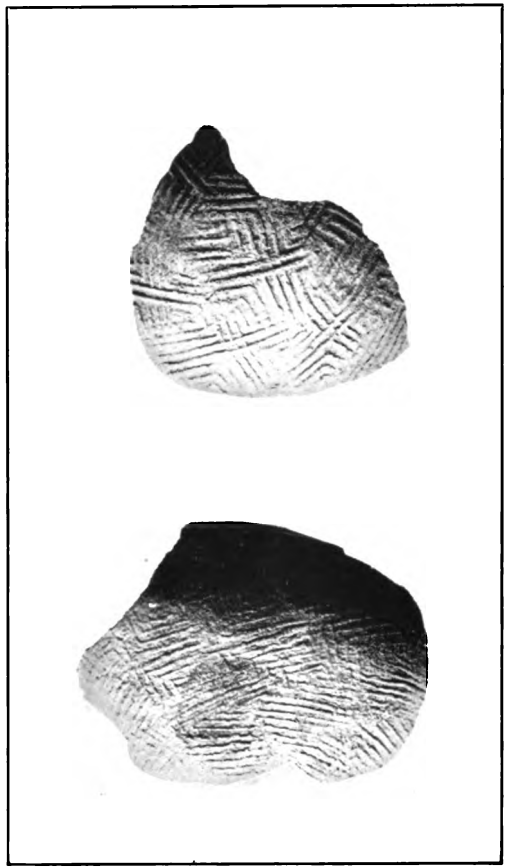

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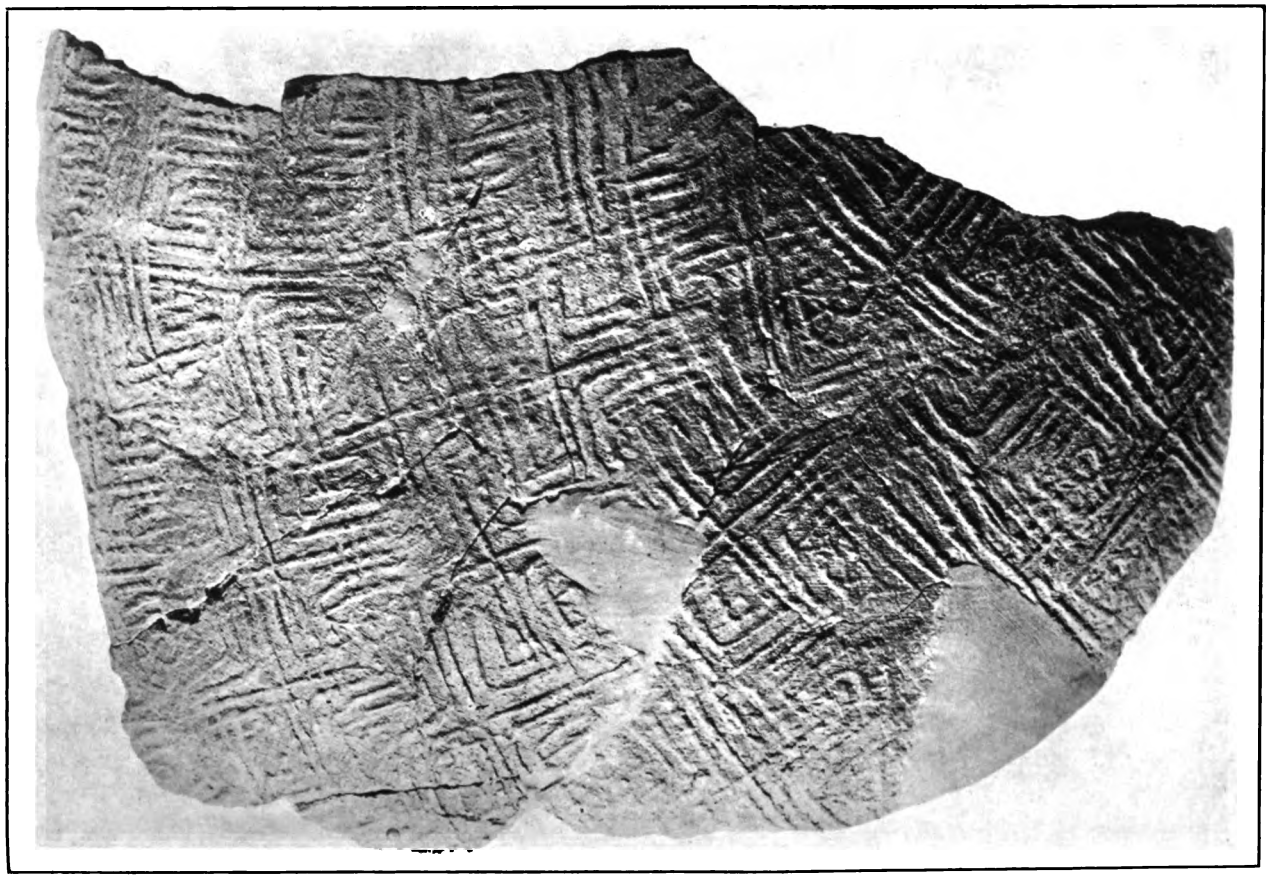

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Burial 51.—(Depth 16 ft. 6 in.) Adult, directed S.W.–N.E., the skull S.W. The body had been flexed, but no other features of the burial were determinable owing to the advanced state of decay, only a portion of the skull, a femur, and a few other fragmentary bones being present. On the surfaces of the skull and the other bones there was a black incrustation of indeterminate character, and above and below the bones were a number of partially burned animal bones and several large pieces of charcoal. There were no artifacts.

Burial 52.—(Depth 18 ft.) Adult, directed N.E.–S.W. This skeleton lay in moist earth, and the bones were so soft and lacking in distinctive coloring that the entire upper part was removed by a workman before the presence of the burial was noted. No artifacts were found.

Burial 53.—This burial in a stone grave has already been described. See page 25.

Burials 54–56.—These burials have already been described in connection with the five pockets at the base of the eastern side of the mound. See pages 32–33.

Burial 57.—(Depth 19 ft. 6 in.) This burial consisted only of a portion of the jaws of an adult which showed the lines of a few of the upper and lower teeth, together with faint traces of other bones. The grave had been lined with bark. As it was not possible to determine the direction of the burial, and as the limits of the grave were not well defined, it could not be learned whether the skeleton had extended under the disturbed area and Pocket 5 earlier described (p. 33), or had been directed eastwardly. There were no accompaniments.

Burial 58.—(Depth 12 ft.) Adult, directed N.E.–S.W., with head toward N.E. The body lay on its right side, the legs drawn up toward the trunk. A small discoidal stone was found above and within an inch of the pelvis.

Burial 59.—(Depth 18 ft.) Adult, directed N.E.–S.W., with the head toward the N.E. The body lay on its right side, the legs flexed. The skeleton was represented only by portions of the skull and the leg-bones, the other bones having disappeared through

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decay. The grave had been lined with bark. One foot above the skull and 18 in. northeast of it was a stone celt, and near it three small arrowpoints, similar in size, form, and material to those found with Burial 53, the skull of which was only a few feet from that of Burial 59.

Burial 60.—(Depth 6 ft. 5 in.) Adult, buried probably in an E.–W. direction, with the head toward the E. All that remained of the skeleton were the femora and part of the pelvis. The legs had been flexed. About a foot from the burial, and extending southward from it about six feet, was a layer of large pieces of charcoal mixed with carbonized cane, suggesting a former shelter like that previously described as having been found near the summit of the mound. An inch above the bend of the knees was a large stone celt, lying on its side with the cutting edge toward the north, generally similar in size and shape to the celts found with Burials 53 and 59.

Burial 61.—(Depth 6 ft. 9 in.) Adult, directed S.E.–N.W., with the head toward the S.E. The skeleton was represented only by the skull and the femora, the skull being crushed. The position of the femora indicated that the legs had been flexed. The grave had been lined with bark, and an unusual quantity of charcoal was over and under the bones. A piece of disintegrated shell, about an inch in length, was found under the jaw.

Burial 62.—(Depth 7 ft. 1 in.) Adult, lying on its left side, directed S.E.–N.W., with the head toward the S.E., the legs flexed. The only recognizable portions were the crushed skull, the pelvis, and the femora. The bark lining of the grave of Burial 61 extended under this skeleton also, and this, with the general discoloration, indicated that the two bodies had been buried at the same time. In the soil surrounding the two burials were a number of flattish pebbles, over each of which was about a double handful of clear sand. There were no artifacts.

Burial 63.—(Depth 10 ft.) Adult, directed S.E.–N.W., head toward S.E., body resting on left side, legs flexed, face turned S.W. Only the skull, leg-bones, and one arm were present; the skull was crushed and all the bones were badly decomposed. Resting between

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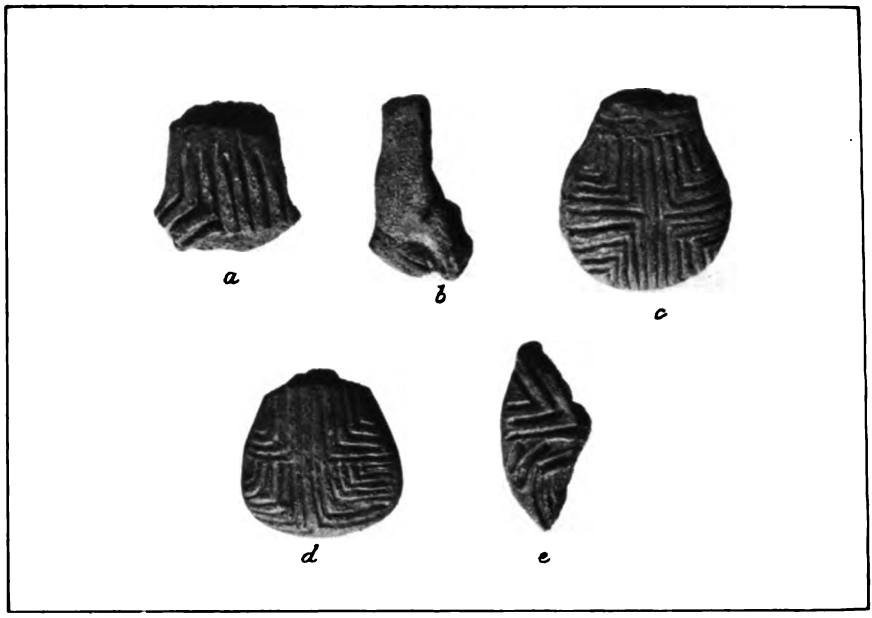

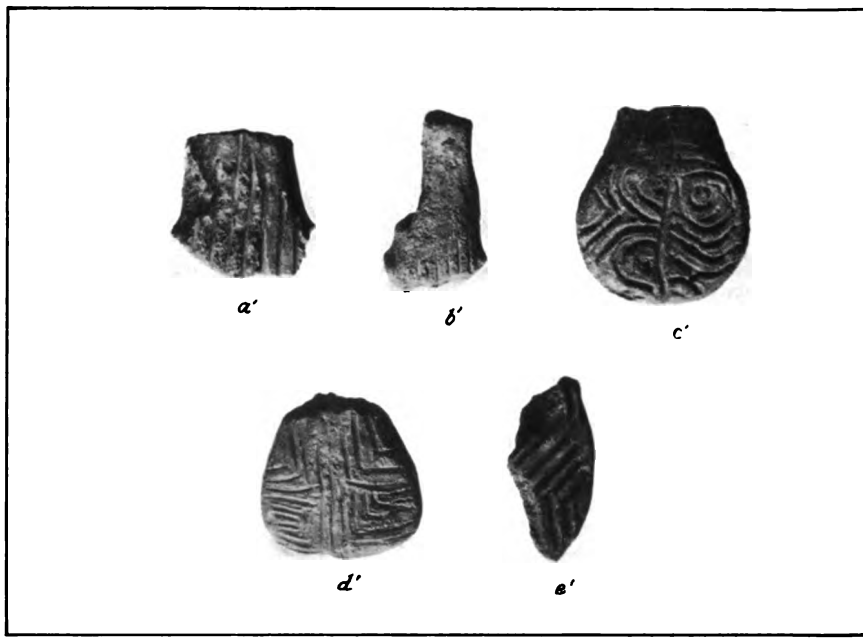

PARTS OF FIVE EARTHENWARE PADDLES USED IN ORNAMENTING POTTERY

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the femora and where the lower vertebræ would have been, was a large stone celt, with the blunt end toward the head, the implement parallel with the direction of the body. Six inches southwest of the feet was a large piece of charcoal, and a piece of rock crystal was found near the trunk.

Burial 64.—(Depth 16 ft. 6 in.) Probably a young adult, the only portions of the skeleton of which were the leg-bones, which had been flexed. There were no accompaniments.

Burial 65.—(Depth 8 ft. 10 in.) Adult, directed S.E.–N.W., with the head toward the S.E. The body lay on the left side, the legs flexed. The bones were much larger than the average. No artifacts were found with the remains.

Burial 66.—(Depth 16 ft. 10 in.) Adult, directed N.E.–S.W., with the head toward the N.E., body lying on right side and flexed. The bones were all greatly decayed and the skull was crushed. Nothing was found with the burial.

Burial 67.—(Depth 17 ft. 9 in.) Adult, of which only the leg-bones and a portion of the pelvis were traceable. The orientation was indeterminate. No artifacts accompanied the burial.

Burial 68.—(Depth 18 ft.) A number of bone fragments only, none identifiable except those of the legs. The discoloration of the grave earth was well defined, and judging by its extent the skeleton had probably been that of an adult which had been flexed. It was not possible to determine the direction. No accompaniments.

Burial 69.—(Depth 18 ft.) The bones of this skeleton had disintegrated to such an extent that only a portion of the skull remained. The direction of the burial was not determined, and there were no artifacts.

Burial 70.—(Depth about 6 ft.) This skeleton was brought to light by the cave-in of the bank exposed by the great trench in the eastern section of the mound, following a heavy rain. Several teeth and a few fragments of bone were found, but careful search through the fallen material failed to reveal any other parts of the skeleton, and the exposed earth contained no grave discoloration. Directly above the point whence the bones came, there was a thin layer of charcoal about eight feet in length. With the bones and

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teeth were a fragmentary jar, a bone pin (fig. 61), and the heads of two shell pins identical in form to those represented in fig. 59.

Burial 71.—(Depth 8 ft.) A few teeth and fragments of bone were all that were left of the skeleton of this young person, and no artifacts were found with it.

Burial 72.—(Depth 14 ft.) Adolescent, directed N.E.–S.W., head toward N.E., back of skull turned to N.W.; body flexed in such manner that the vertebræ almost formed a semicircle. Most of the bones were in their relative positions, but a few had been scattered, perhaps by burrowing animals. Many of the bones were crushed and some were disintegrated, but the vertebræ were in better condition than any other found in the lower part of the mound. Near the pelvis, clam-shells in fragments were found, two of them in a fair state of preservation. In the earth just above the body were a pitted hammerstone, a stone disc, and two potsherds.

Burial 73.—(Depth 12 ft.) Adult, directed E.–W. with head toward the E. and with body flexed as indicated by the curve of the vertebræ, which, however, was represented by little more than a line of color. The skull, the arm and leg-bones, and the pelvis were in better condition, but no other bones were in evidence. There were no artifacts.

Burial 74.—(Depth 16 ft.) The grave was well defined by the usual discoloration and was within a foot of the stone stratum previously described (see p. 34); but the skeleton had almost disappeared through decomposition. Parts of a Busycon shell were found with the bones.

Burial 75.—(Depth 12 ft. 6 in.) A child, directed S.W.–N.E., head toward S.W., an unusual but not unique direction in this mound. The body lay extended on its back, legs flexed, the face upward. The length of the skeleton from the skull to the ends of the leg-bones was only 22 inches; it was the only child's burial found in the lower reaches of the mound, a not surprising fact when it is considered how poorly preserved were the remains of adults. Nothing in the way of artifacts was found.

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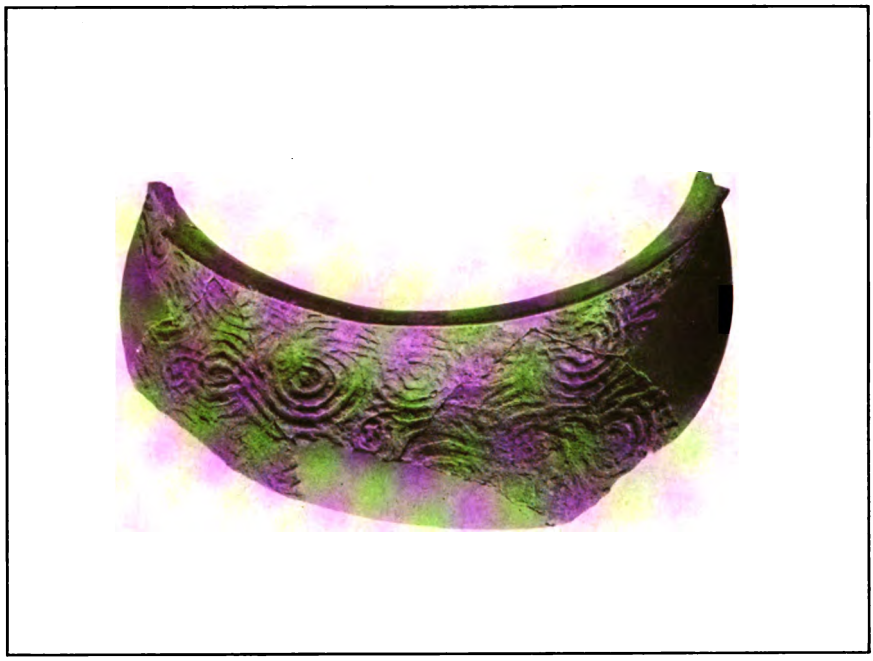

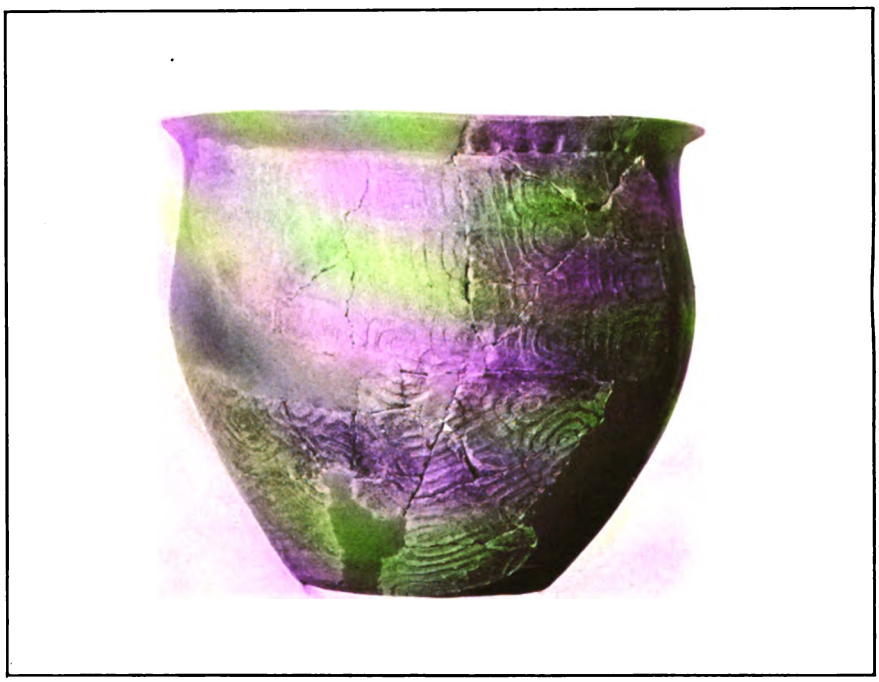

VESSELS STAMPED WITH CURVILINEAR PATTERNS

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Summary of Observations on the Mortuary Remains

It has been noted that all the skeletal remains uncovered at Nacoochee were in such a decayed condition that in no instance was it possible to preserve them for measurement; indeed in many cases the bones were so greatly decomposed that they could be traced only with difficulty. Considering the excessive precipitation in the Nacoochee valley, this condition is not surprising.

Of the 75 skeletons unearthed, 56 were of adults, 7 of adolescents, 4 of children, and 8 were unidentifiable as to age. Considering the condition of the skeletons of the adults, it was not to be expected that a greater number of burials of children would be encountered, especially as the presence of relatively few of the remains was revealed by accompanying artifacts.

With respect to orientation, it is observed that 48 of the dead were interred with the head directed eastwardly (E. 19, N.E. 19, S.E. 10), about 6 southwardly, 3 southwestwardly, 3 northwestwardly, and 1 in a sitting posture, while 14 were of indeterminate direction.[1] In regard to age, we find that the direction of burial bears no special signification, as might have been expected, the summary of the data in this respect being as follows:

Adults: E. 14; N.E. 16; S.E. 9; S. 5; N. 3; S.W. 1; sitting 1; indeterminate 6.

Adolescents: E. 2; N.E. 2; S.E. 1; S.W. 1; indeterminate 1.

Children: E. 2; N.E. 1; S.W. 1.

As to the position in which the dead were deposited in the graves, we find flexion of the body and especially of the legs quite common at Nacoochee; indeed it was in exceptional instances that extended skeletons were met. Of the 51 burials whose positions in the graves were determinable, 47 were flexed in varying degrees, while only 4 were buried extended at full length—two adults, one adolescent, and a child. Of 42 skeletons, 19 lay on the right side, 16 on the left side, 4 on the back, 2 face down, and one was in a sitting position as above noted.

In the matter of mortuary artifacts, 27 of the 75 burials were

[1] Adair (op. cit.. p. 182), writing of the Southern Indians without specifying the tribe in this case, refers to the burial of a chieftain in a tomb "with his face towards the east."

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accompanied with objects of more or less importance, 11 with objects of practically no significance (such as may have found their way into the graves through accident at the time of burial), while 37 of the burials had no accompaniments of any description. Nine of the graves showed evidence of having been lined with bark, and with four of the interments articles of European manufacture were found. These last burials were respectively at a depth of 33, 28, 33, and 44 inches beneath the summit, indicating quite clearly that the mound had reached a height probably not far from its maximum during the historical period. It should not be forgotten that about two feet of the summit had been removed in recent time. With none of the deeper burials were objects of European provenience found.

In the latter part of the eighteenth century Adair wrote[1] that "the Cherokee of late years by the reiterated persuasion of the traders, have entirely left off the custom of burying effects with the dead body; the nearest of blood inherits them." This statement, however, hardly applies to the inhabitants of Nacoochee, as there was no more indication that they had abandoned the custom of making funerary deposits during the later occupancy of the mound than in earlier times.

Further summarizing the data derived from the graves, we find their distribution as to depth beneath the surface of the mound as follows:

Surface to	3	feet	5	Burials
3 +	" 6	"	20	"
6 +	" 9	"	14	"
9 +	" 12	"	15	"
12 +	" 15	"	8	"
15 +	" 18	"	10	"
18 +		"	3	"
Total			75	Burials

This distribution is presented merely as a matter of record, being admittedly of little value so far as the aggregate of burials in the mound is concerned, a relatively greater amount of digging being done in the upper than in the lower levels.

[1] James Adair, History of the American Indians, p. 178, London, 1775.

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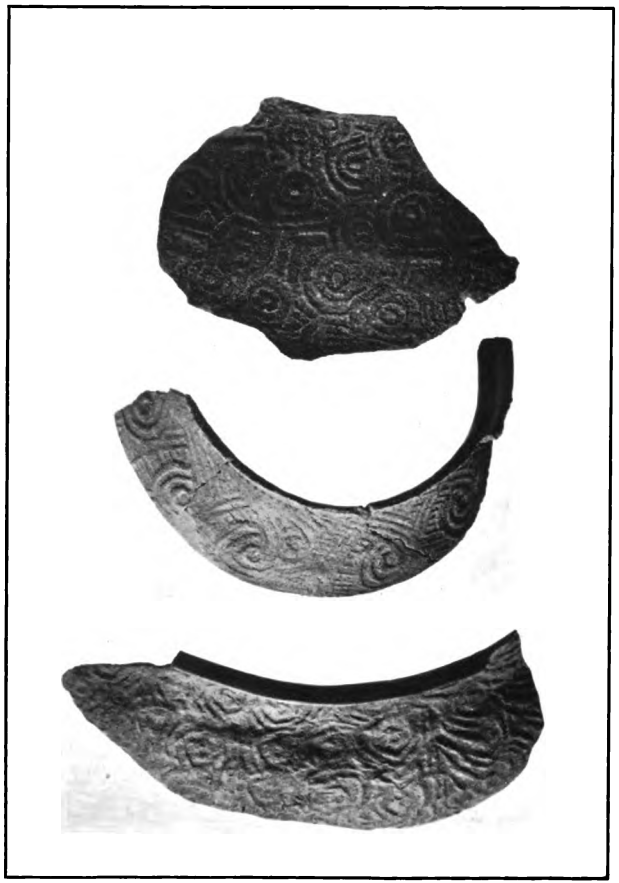

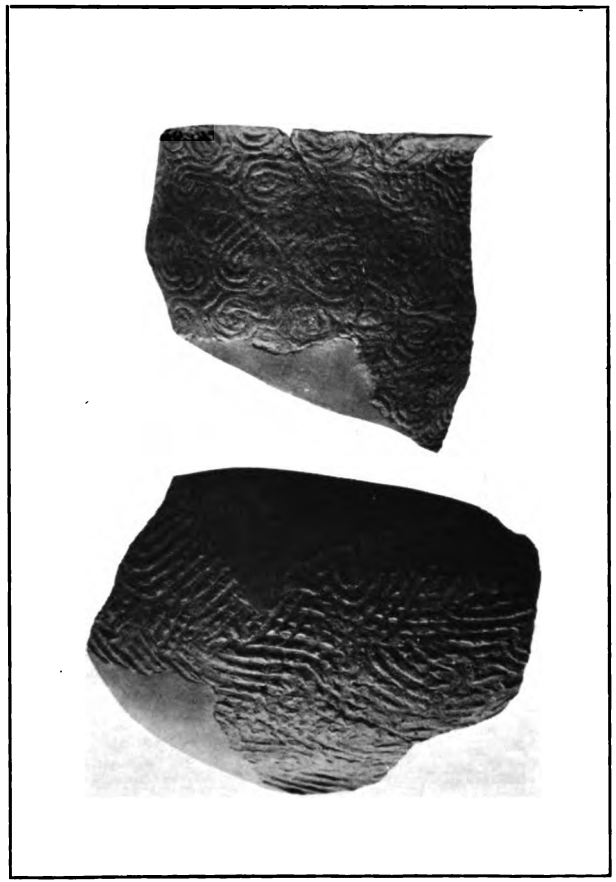

SHERDS OF VESSELS STAMPED WITH CURVILINEAR PATTERNS

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MATERIAL CULTURE

POTTERY

It has already been observed that there was a paucity of earthenware vessels found as funerary accompaniments at Nacoochee, and indeed entire vessels of any kind were quite rare. Fragments, however, large and small, were present in thousands, especially under the surface of the slope and at the base, where the receptacles, no doubt broken in use, had been cast during the occupancy of the mound. In a limited number of instances related sherds were found together, enabling more or less complete restoration, but in others only relatively small parts of the utensils were recoverable, yet sufficient to enable a study of their general character, former shape, and ornamentation.

CHARACTER OF THE EARTHENWARE

By far the greater number of the receptacles consisted of cooking-pots or water-jars of black or dark gray ware, which ranged in size from a few inches in diameter and height to one that measures 60 in. in maximum circumference and 15 in. high, while another is only slightly smaller; and indeed certain sherds indicate, from their size and curvature, that they are parts of vessels of even greater dimensions. Some large sherds of soft reddish ware were found, as well as other sherds of small bowls and jars, polished red inside and out, and without decoration. Almost invariably the ware is rather fragile, not only from long-repeated subjection to heat while in use for cooking, but owing also to the inferior quality of the paste, which was tempered with sand, often micaceous, or with sand and ground shell, or with shell alone, particles of which are plainly visible in a limited number of the vessels or their fragments. There is also reason to believe that pure mica was ground and mixed with the clay as a degraissant.

Timberlake,[1] writing in 1761, stated that the Cherokee "have two sorts of clay, red and white, with both of which they make excellent vessels, some of which will stand the greatest heat." Adair,[2] writing about the same period, said:

[1] Henry Timberlake, Memoirs, p. 62, London, 1765.

[2] Op. cit., pp. 424–425.

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"They make earthen pots of very different sizes, so as to contain from two to ten gallons; large pitchers to carry water; bowls, dishes, platters, basons, and a prodigious number of other vessels of such antiquated forms, as would be tedious to describe, and impossible to name. Their method of glazing them, is, they place them over a large fire of smoky pitch pine, which makes them smooth, black, and firm. Their lands abound with proper clay, for that use; and even with porcelain, as has been proved by experiment."

It may here be remarked that every variety of pottery found (with the exception of the painted effigy jar hitherto described, which evidently was intrusive), in both shape and ornamentation, was gathered at all levels of the mound, suggesting that the occupants manufactured all the types of earthenware throughout the occupancy of the site. The ware is of the typical Southern Appalachian form and style, in no particular respect different from that of other pottery made by the Cherokee in early times.[1]

In thickness the receptacles average from about three-sixteenths to a quarter of an inch, even the largest ones being comparatively thin-walled. The inside of the vessels was almost invariably smoothly finished, and in many cases it was given a black coating and polished, apparently to overcome the porosity to some extent and to facilitate cleaning. Probably it was this blacking and polishing of the inside of the pottery that Adair mentions.

Regarding the form of the vessels, the larger specimens, or rather those that admitted of restoration, are chiefly globular, with wide mouth, somewhat constricted neck, outcurving rim, and with the maximum diameter at the shoulder (pl. XVII, XVIII). In this type the bottom is generally rounded, but some sherds, evidently of jars, show almost flat bottoms. Other receptacles take the form of deep bowls, the body shaped like the jars from the shoulder to the base (pl. XIX). Others still had their greatest diameter at the somewhat flaring rim, the sides swelling considerably at the middle, or else to only a slight degree, then tapering gradually to the base. Unfortunately no complete specimen of this form of jar was obtainable, but the major part of each of two specimens is shown on plate

[1] See Holmes, Aboriginal Pottery of Eastern United States, *Fifteenth Annual Report of the Bureau of American Ethnology*, Washington, 1903.

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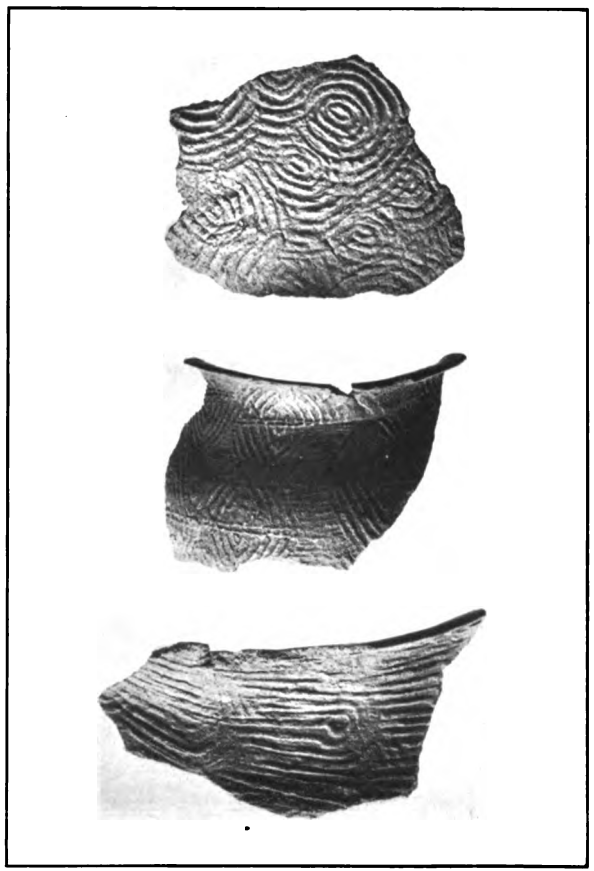

SHERDS OF VESSELS STAMPED WITH CURVILINEAR PATTERNS

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XX. Some of the jars curved outward so slightly as to have been practically cylindrical.

The only jar found by us that may be regarded as complete (as it lacked only a small piece at the rim) was a mortuary vessel found with Burial 10. This little vessel (pl. XXI) stands 5¼ in., with a circumference of 18 in. at the middle; it is heavy in comparison with its size, and is of coarse ware and crude workmanship; but an attempt was made to relieve its homeliness by impressing in its surface two double bands with the two ends of a cane probably cut off at the nodes, or with two canes varying slightly in size.

In addition to this jar, however, there is another entire vessel from Nacoochee, a fine bowl that had been found by Captain Nichols and procured from Mrs Payne. This receptacle stands 7¼ in., is 13⅜ in. in diameter at the rim, and measures 47 in. in circumference of body. While rather rough below the shoulder, the upper part of the bowl is ornamented with eight incised scrolls, connected at the top with straight bands which also form parts of simple geometric devices which fill the intervening panels. This bowl is illustrated in plate XIX, *b*.

Toy Vessels.—Five tiny vessels, evidently intended for toys and possibly all but the largest one made by children, are illustrated in plate XXII, *a–c*, *g–i*). The one designated *c* is thick and clumsy, but with the under-body polished as if from use. A large grain of sand is embedded in the inner wall, showing with what carelessness the little bowl was formed. The largest vessel (*b*), a toy bowl, has been restored, but enough remained to enable determination of the entire form and character. It is smooth within, but almost unfinished and checked outside, and its shoulder-like rim is rudely incised by way of ornamentation. The smallest one shown (*g*), only an inch and a quarter long, has almost the density of stone. Much of the body is taken up by four disporportionately large nodes, while the receptacle part is large enough only to receive the tip of the little finger.

Dippers.—Fragments of handles and bowls of small earthenware dippers are the only evidence that such utensils were in use at Nacoochee, no complete ones being found.

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Rims.—The rims of the vessels are of considerable variety, both in form and in ornamentation. The dentate border (shown in various examples in accompanying illustrations, especially in pl. XXIII, XXIV, and in fig. 5–14), which varies greatly in character and spacing, as well as in its relation to the lip of the vessel, was evidently the favorite device employed in embellishing the rims, judging by the large proportion of this kind found. In some

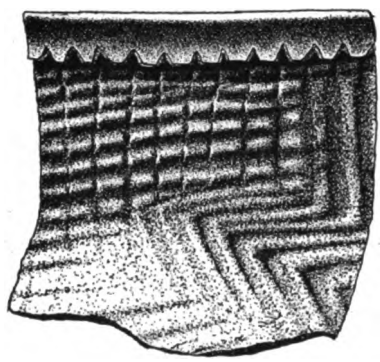

FIG. 5.—Dentate rim ornamentation.

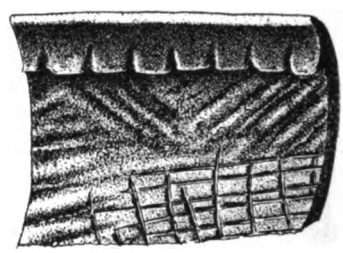

FIG. 6.—Dentate rim ornamentation.

examples the band is truly dentate or beaded, in others it consists of a series of rude nodes regularly or indifferently spaced, and in still others there is little more than a suggestion of ornamentation, the spaces being indicated by crude incisions, or the clay having been pressed into a semblance of finish by means of a blunt instrument, the end of a cane-stalk, or even with the finger-tip, which in some cases left its prints in the clay. Only in exceptional instances is the lip unaccompanied with an ornamental band or border of some kind, and in these the decoration of the sides with stamped or incised devices usually commences immediately beneath, as shown in the illustrations. In almost all cases the ornamental rim was applied as a separate strip of clay during the process of manufacture, and in these instances the body of the vessel had been ornamented with a stamped design and was almost if not quite dry when the rim portion was luted on. This process made the attachment of the rim quite insecure, as shown by a number of

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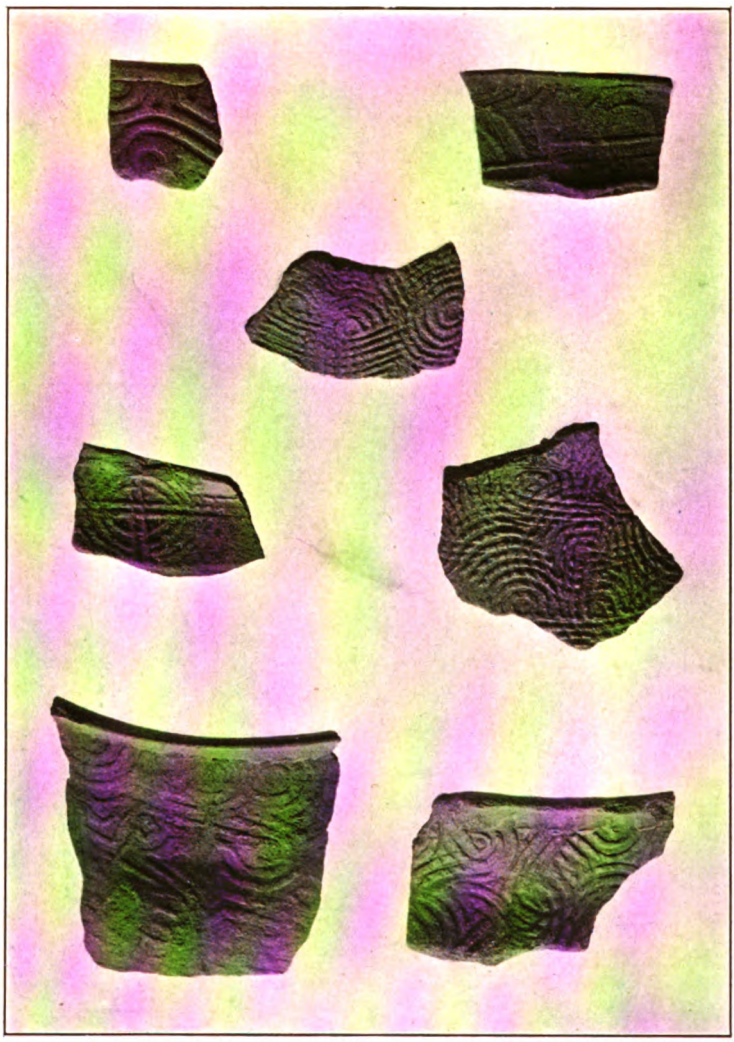

SHERDS OF VESSELS STAMPED WITH CURVILINEAR PATTERNS

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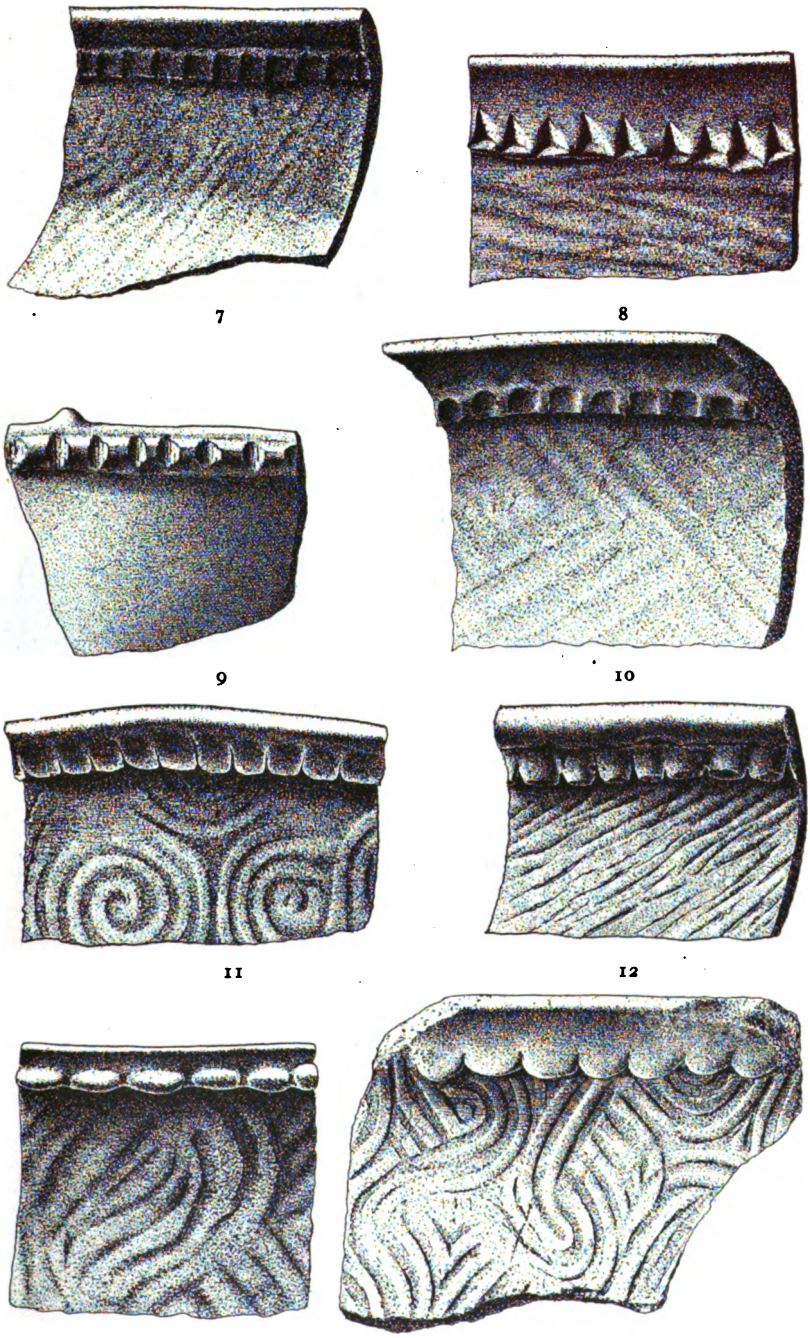

FIGS. 7–14.—Examples of rim ornamentation.

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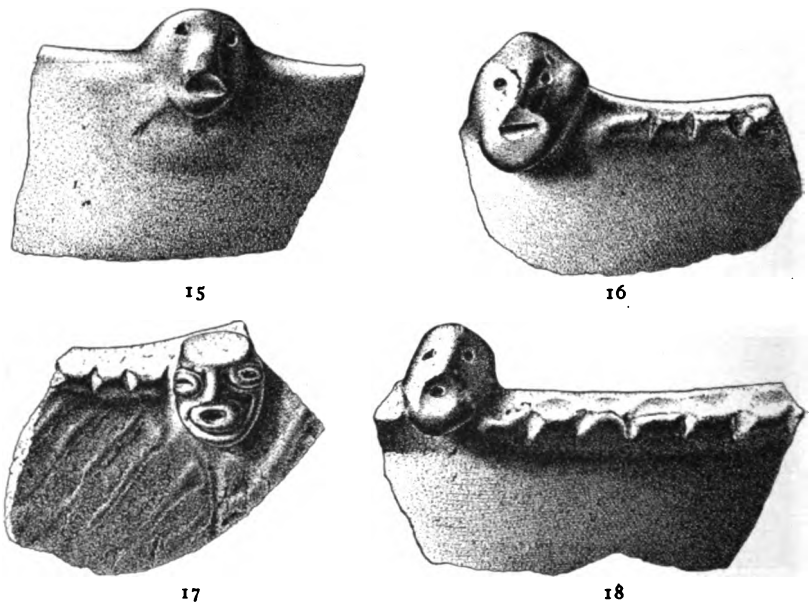
sherds from which all or a part of the ornamented rim has fallen away, exposing the stamped surface beneath. The reason for this seems obvious, for it was necessary to stamp a pattern on the walls of the vessel while the clay was still soft, which it probably would not have been had the potter waited until she first applied the sometimes tedious rim ornamentation.

In addition to the dentate or beaded form of rim embellishment, we find on vessels with stamped patterns on the body a number of other decorative devices at or near the lip, as shown in several of the illustrations. Noteworthy among them are the rims on which are present more or less grotesque human heads, some



15 16

17 18

FIGS. 15–18.—Grotesque heads on rims of vessels.

flanked with a row of nodes (fig. 15–19). Unfortunately these exist in the collection only in the form of sherds, yet they exhibit something of the sculptural art of the Nacoochee potters. Other sherds show each a node projecting from the rim, flanking which was a line of round depressions seemingly made with the end of a small cane (fig. 20), and the same decorative device was employed

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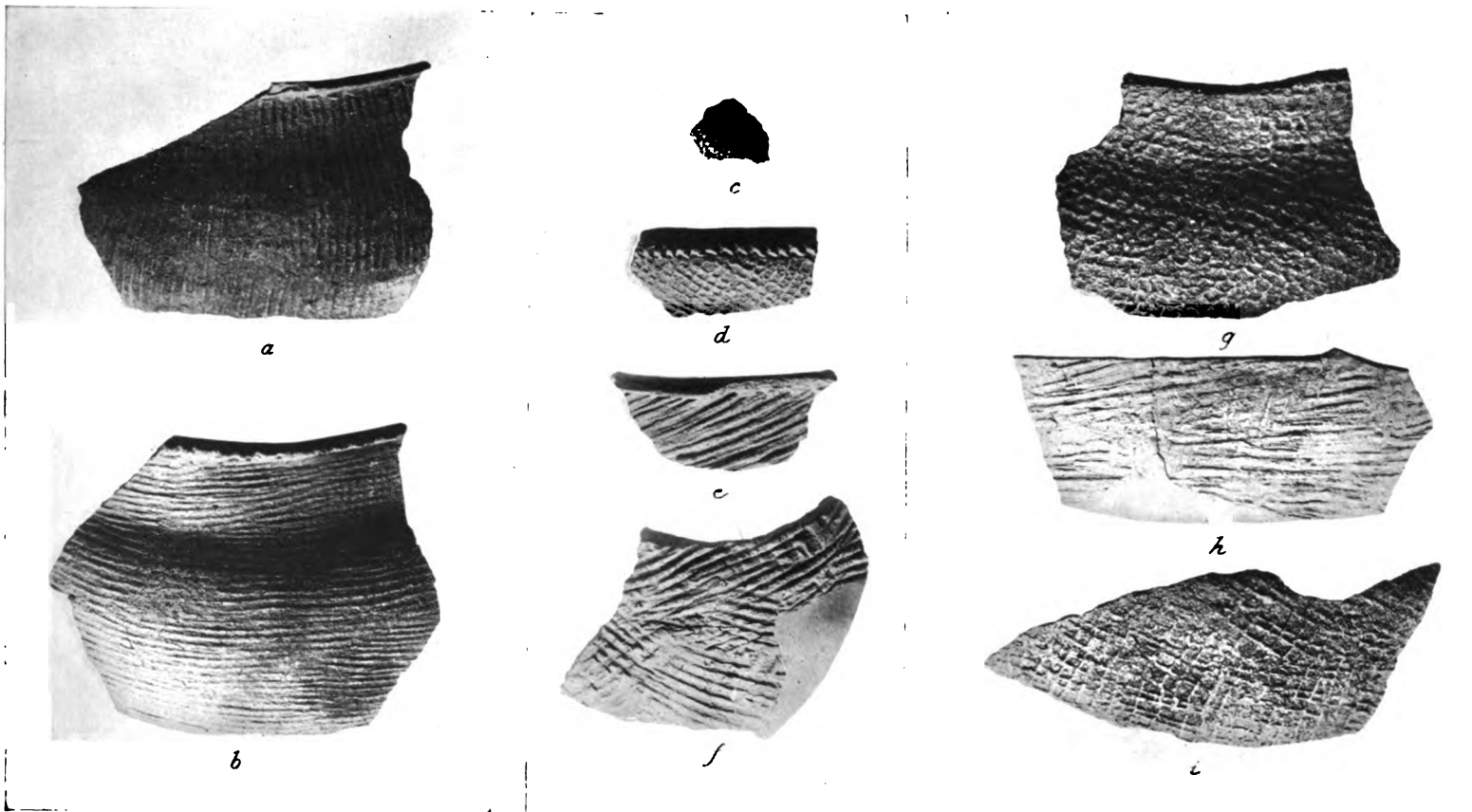

SHERDS OF VESSELS STAMPED WITH CORD-WRAPPED PADDLES

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about the rims of two other vessels, one of plain red ware without additional rim elaboration (pl. XXIII, *c*), the other containing a more deeply punctured series of holes (made probably with a small blunt

FIG. 19.—Grotesque head on rim of vessel.

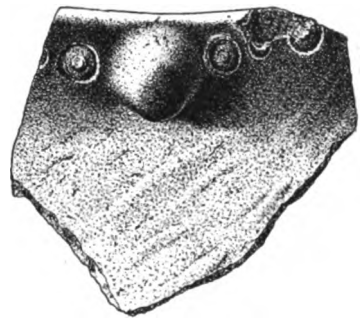

FIG. 20.—Node and punctate decoration.

twig) which appear on a ridge forming the rim, the holes terminating at a prominent node which projects therefrom (fig. 21). It is difficult to distinguish these devices from the knob handles to be described; indeed the modeled heads referred to were doubtless designed primarily for utility, since they would have served the same function as the simple knobs or lugs often found on rim fragments from Nacoochee and elsewhere, to be mentioned later.

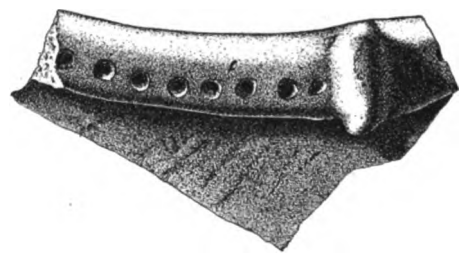

FIG. 21.—Rim with node and punctate decoration.

Another form of decorative border was produced by punching the clay, while moist, with the end of a cane or other tube as shown in fig. 22, which presents an ornamental band made by cutting out the alternate spaces with a small sharpened cane that left the grain of the edge impressed in the clay.

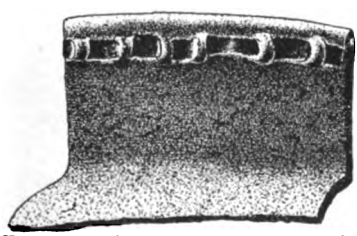

FIG. 22.—Rim ornamented by punching the clay with a cane.

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A sherd of an unusually thick vessel whose wall measures nearly three-eighths of an inch below the lip, is also of exceptional plainness of rim, which was simply rounded over in the form of a heavy lip, without any ornamentation (pl. XXIV, *q*). Somewhat related in form is the rim of another vessel whose only ornamentation consisted of series of incised triple oblique lines, alternating right and left (pl. XXIV, *a*). A diagonal punctate decoration, effected by means of a small hollow cane or twig, appears near the edge of the flaring rim of a sherd shown in plate XXIV, *f*. In only one specimen, a small sherd of reddish ware, does the rim curve inward (fig. 23).

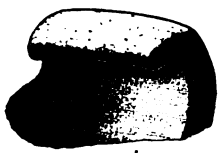
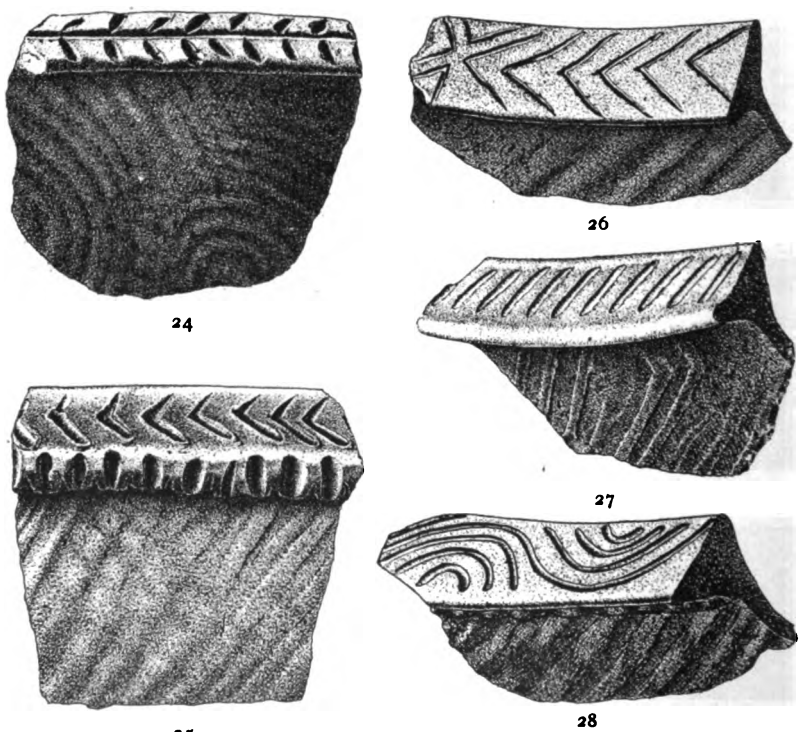


FIG. 23.—An incurving rim.



24 25 26 27 28

FIGS. 24–28.—Shouldered rims with incised decoration.

The rims thus far described bear their ornamentation on the face or side, beneath the edge. There are a few sherds, however,

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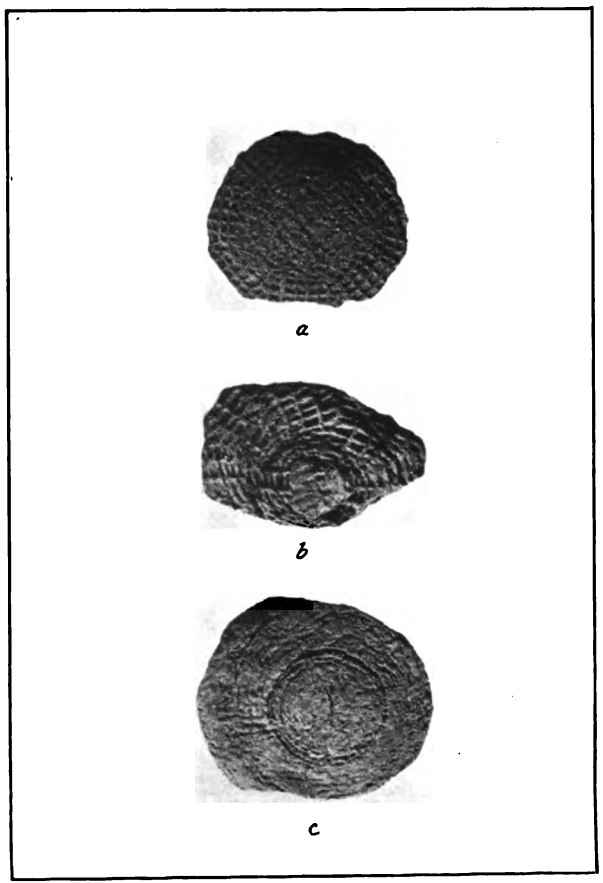

EARTHENWARE STAMPED WITH CORD-WRAPPED PADDLES

SHERD OF VESSEL BEARING STAMPED CURVILINEAR PATTERN CONFUSED BY OVERLAPPING

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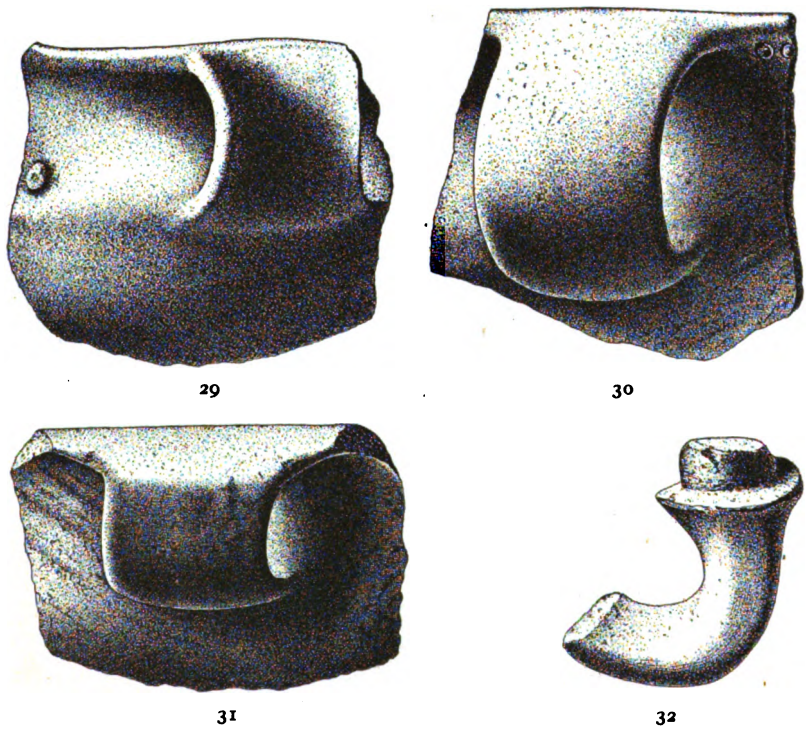
that show a decided shouldering or squaring of the rim, the neck of the vessel extending downward from the center of the rim in every instance but one. This square lip is embellished with incised devices, as shown in figs. 24–28. Three of these examples exhibit parallel acute angles directed the same way; one consists of parallel vertical lines; another, of a central horizontal line bordered on each side with depressions made apparently with the end of a small sharpened stick; while the most elaborate pattern of all



29 30 31 32

FIGS. 29–32.—Plain loop handles.

consists of a compound curve with shorter parallel curves occupying the semicircular spaces thereby produced.

Handles.—For convenience, the vessels were sometimes provided with handles, as above mentioned; often these were so rudimentary as to be mere knobs, but in some instances they were elaborated. These appurtenances may be designated as (*a*) loop handles, (*b*) ridge handles, and (*c*) simple knob handles.

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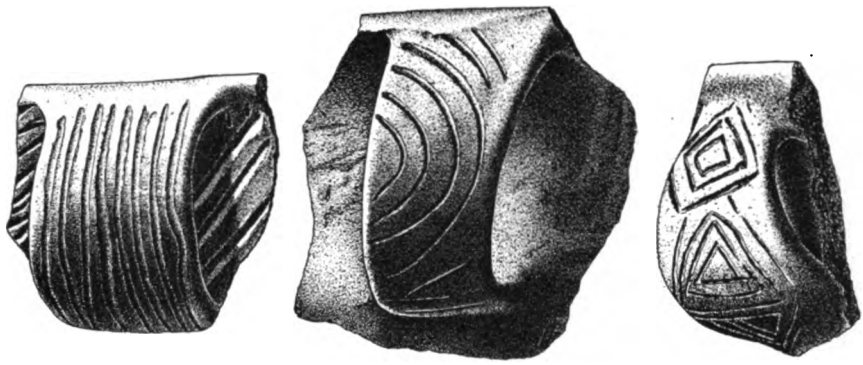
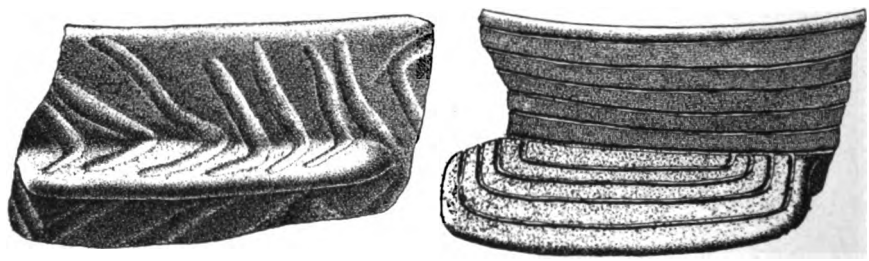
The loop handles are sometimes plain, although the vessels to which they belonged may have been fully decorated with stamped

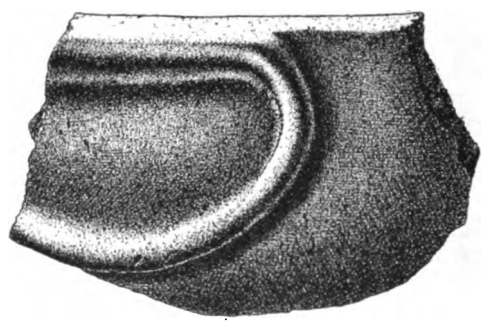


33 34 35

FIGS. 33–35.—Loop handles with incised ornamentation.



36 37



38

FIGS. 36–38.—Sherds of vessels with ridge handles.

or incised patterns; in other cases the loops are themselves ornamented with straight or curved incised lines, or with small depres-

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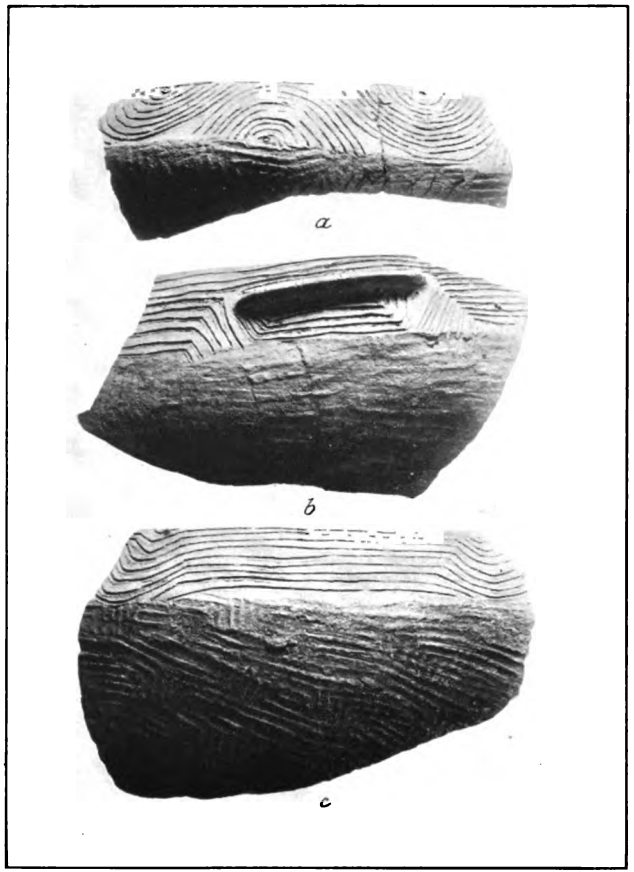

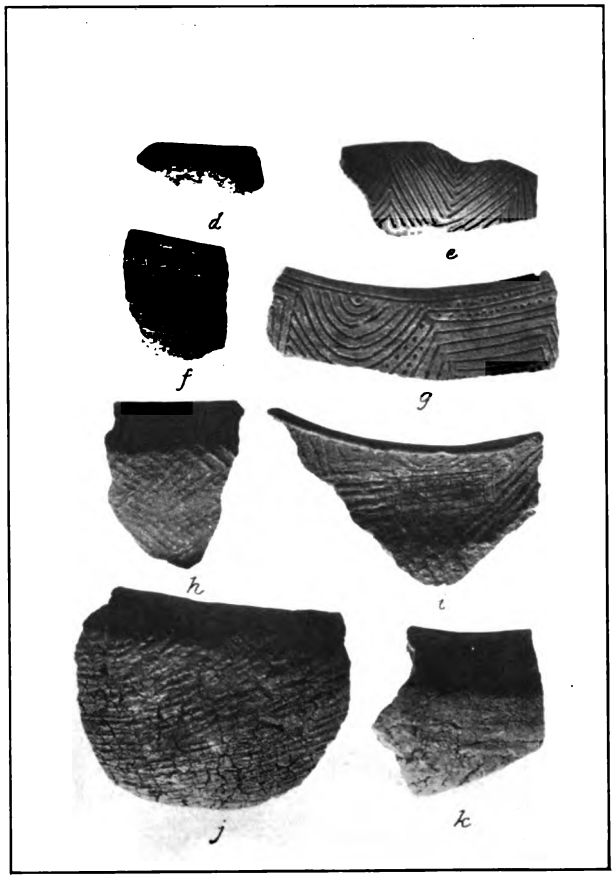

FORMS OF INCISED ORNAMENTATION

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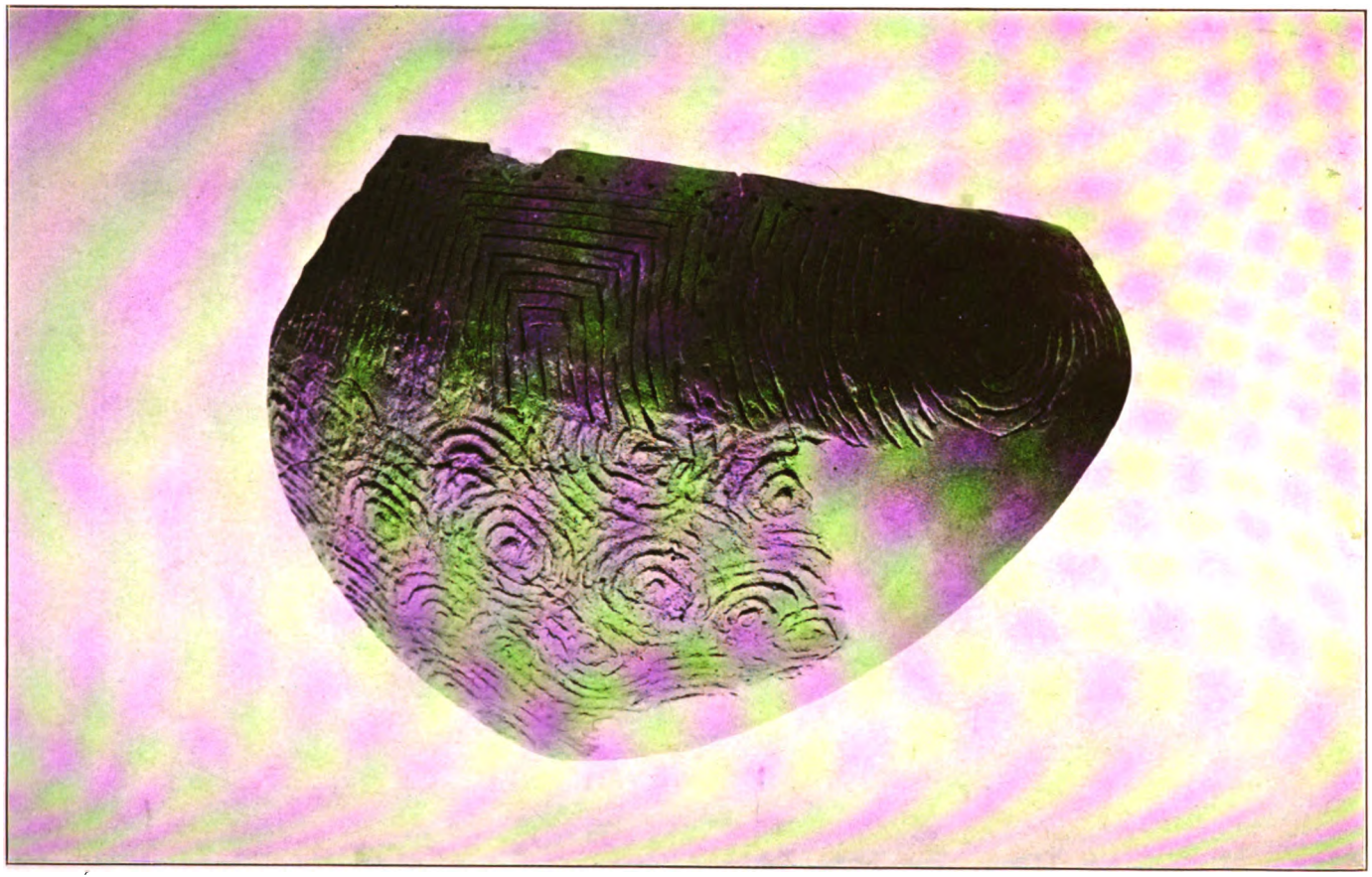

A DEEP BOWL (RESTORED), WITH INCISED AND PUNCTATE ORNAMENTATION ON THE UPPER AND A STAMPED PATTERN ON THE LOWER PART

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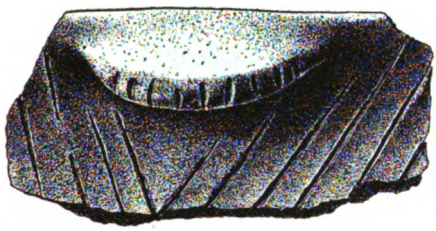
sions, but in none of the specimens is the handle ornamented by stamping, for the obvious reason that the moist clay of the loop would not have withstood the pressure. Examples of loop handles are illustrated in pl. XXV, *a*, and in fig. 29–35. The method of fastening one type of loop handle to the wall of a vessel is shown in fig. 32.



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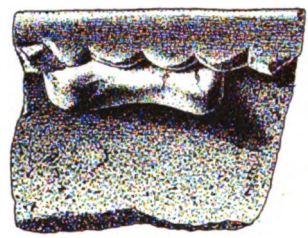

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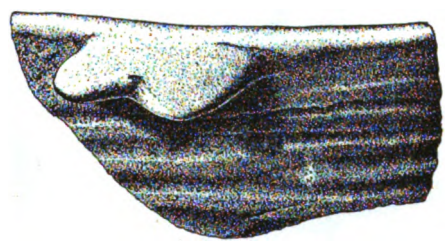
Ridge handles consist of elongate projections beneath the rim. They are plain or ornamented, and sometimes are hardly distinguishable from the rim itself. Specimens are shown in pl. XXXVIII, *b*, and in fig. 36–38.



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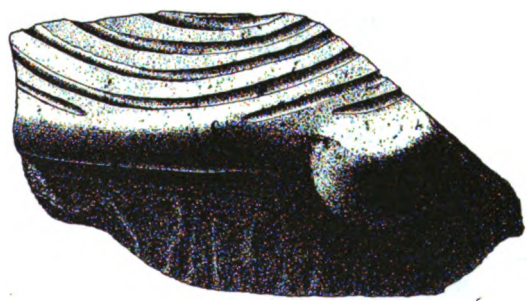

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FIGS. 39–42.—Sherds of vessels with knob handles.

Knob handles are more or less similar to the ridge handles, but are shorter. Examples are illustrated in pl. XVII, *b*; XXII, *d*, *f*, and fig. 39–42.

We have already mentioned certain small effigies in connection with the description of the rims of Nacoochee utensils and which

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doubtless served the purpose of handles. The figurine resembling the head of a dog (fig. 44) was probably broken from a vessel,

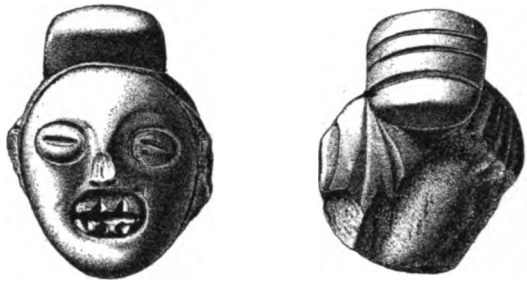

FIG. 43.—Grotesque human head of earthenware.

although what would have been the point of contact, if such were the case, is too much worn to make the determination of such use

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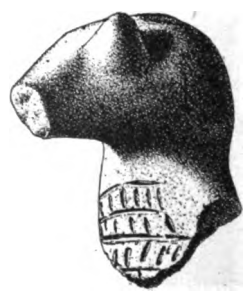

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FIGS. 44–47.—Animal heads of earthenware from the rims of utensils.

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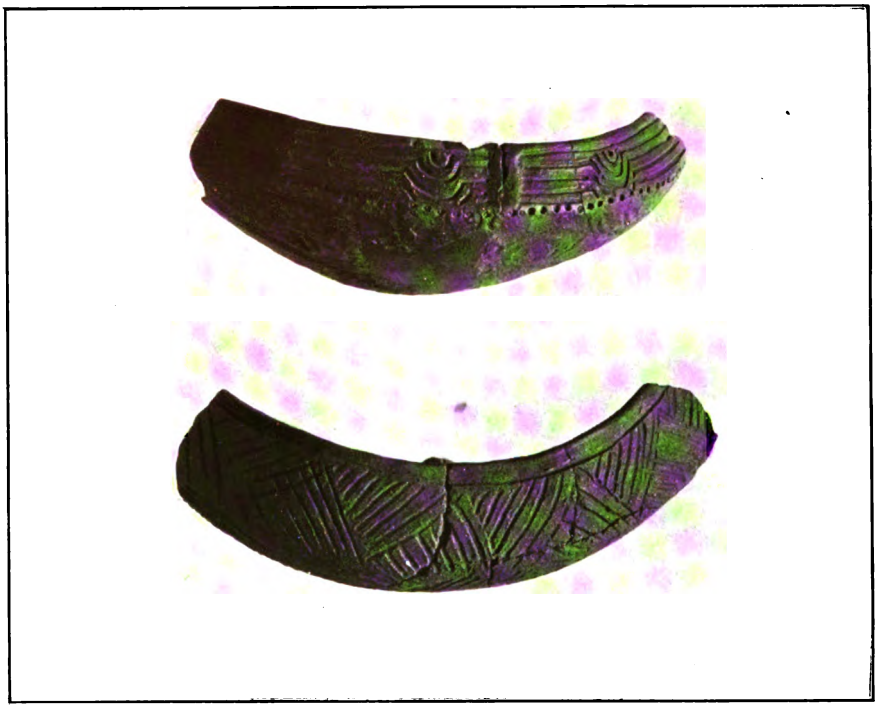

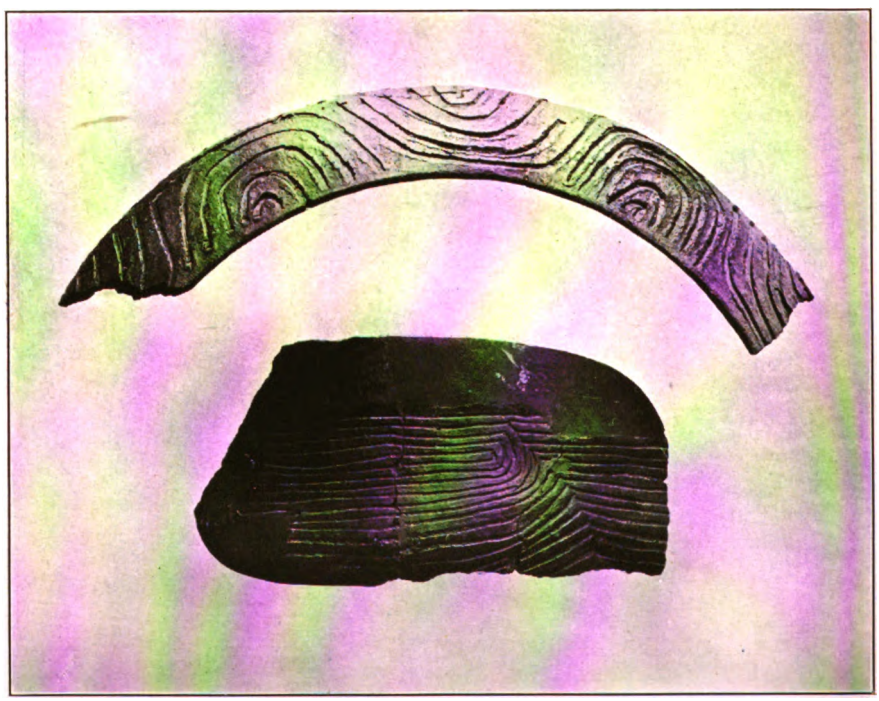

EXAMPLES OF INCISED ORNAMENTATION

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certain. The well-sculptured grotesque human head (fig. 43) was probably used either for a similar purpose or else adorned a pipe—more likely the latter, as the ware is well polished and of the superior quality characteristic of the manufacture of pipes rather than of domestic utensils. An interesting feature is the head-dress, represented as a triple-banded fillet above the crown. On the other hand, the relatively rude owl-like head (fig. 45) was probably broken from the rim or neck of a large cooking-pot, and the same is true of the grotesque sculpture of red-burned clay represented in fig. 46, which possibly represents the head of a soft-shell turtle.[1]

ORNAMENTATION

Stamped Patterns.—Particular attention was given by the makers to the ornamentation of their pottery with stamped patterns or with incised designs, and in numerous instances both of these modes of embellishment were employed on the same vessel, in these cases (if we may safely make an imaginary restoration of some of the utensils) the etching being confined to the upper portion.

The stamped ornamentation of vessels, however, seems to have been preferred to the incised variety, probably because this method was more easily applied, for when once the stamp or roulette bearing the negative of the design or ornament was fashioned, its use by any potter usually required little more than mere mechanical application on her part.

As might be expected, most of the impressed ornamentation is in straight-line patterns; but there are also numerous examples of curved figures, and some sherds exhibit a combination of the straight and the curved. As a rule the attempt was evidently made to stamp the pattern into the plastic clay without overlapping, but often the impression was so carelessly made as to confuse the repeated design, and there are instances in which the paddle had been applied so promiscuously as to destroy the pattern almost completely.

Typical examples of straight-line patterns are illustrated in pl.

[1] Earthenware bowls with similar grotesque heads in place are illustrated by Thruston, Antiquities of Tennessee, pp. 140–154, Cincinnati, 1890.

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XXV–XXX, which convey a more adequate idea of the character of this style of stamped ornamentation than a mere description.

Some of the designs were stamped into the moist clay during the process of manufacture by means of earthenware paddles, as shown by portions of five of these illustrated in pl. XXXI. No entire paddles were found. Wooden implements also were used for this purpose; indeed on some vessels the grain of the wood shows quite distinctly between the relief lines of the ornamentation. The fragmentary pottery stamps referred to are incised on both sides, in one case (*d*, *d'*) the pattern being somewhat similar on the two faces, while in another (*c*, *c'*) practically the same design is seen on one side, while on the other an attempt has been made to produce a spiral-like figure, so frequently found on Nacoochee receptacles. No impressions from any of these particular pottery stamps have been found on any of the hundreds of sherds examined, but there are many that bear patterns of the same general types.

The section shown in pl. XXX illustrates part of a sherd of a very large jar which seems to have been ornamented by covering the face of the pottery stamp with a piece of thin cloth, which left its impression in the depressed parts of the design on the pottery. The portion of the pattern in relief was evidently smoothed with the hand in vessels with more deeply incised ornamentation, at least, and doubtless the same practice was followed in the case of the stamped decoration, as in pl. XXXVII, *d*, for example, for the purpose of removing any rough or sharp edges.

The stamped ware with curvilinear ornamentation is somewhat less common than that with straight-line or rectangular patterns, yet many hundreds of sherds of this variety were taken from the refuse. Most of the stamped ornamentation of this type was crudely applied, and, as in the case of the straight-line or angular decoration, care was not always exercised in avoiding overlapping of the pattern. Some of the impressions are very coarse, due both to the crudeness of the stamps and to the inexpert manner in which they were applied. On the other hand, some of the fragments exhibit care and esthetic merit, the stamps having been carefully designed and prepared, and the stamping done with considerable

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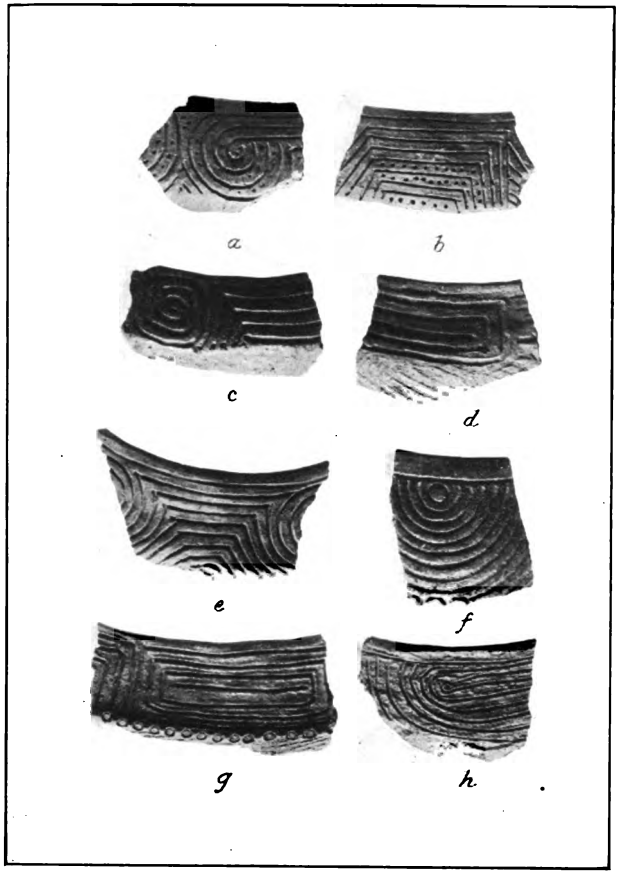

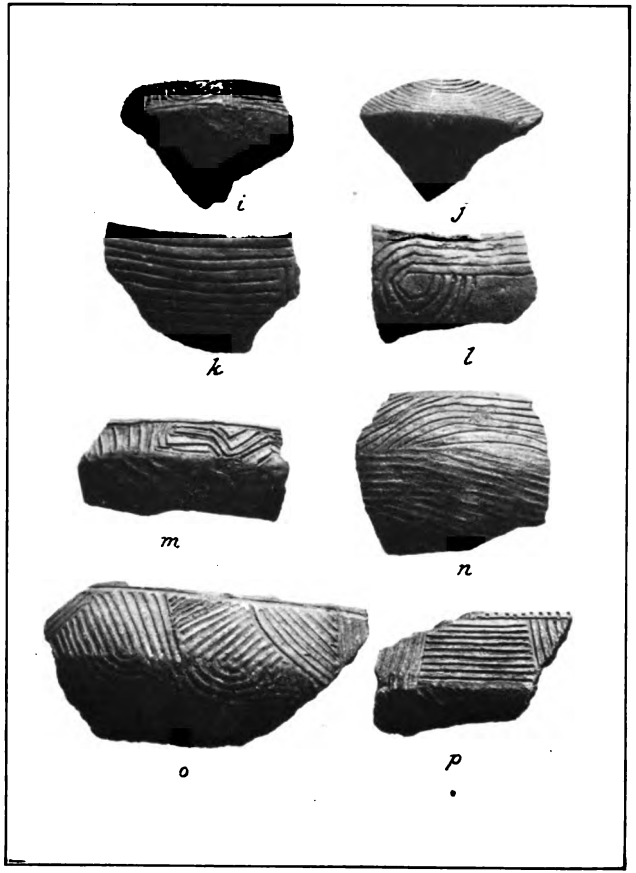

SHERDS EXHIBITING INCISED ORNAMENTATION

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skill. A selection showing the range of curvilinear patterns is presented in the accompanying illustrations (pl. XVII, *a*, *c*; XXXII–XXXV), which will afford a further idea of the artistic attainment of the Nacoochee potters.

A class of stamped ware that is likely to mislead one as to the manner in which the ornamentation was applied to the surface of vessels is characterized by horizontal, vertical, or oblique lines, sometimes crossed by other lines, produced by wrapping the paddle or roulette with cording made of vegetal fiber. Examples of these are shown in pl. XXXVI. In addition, there are specimens similarly stamped, but with a paddle on which was carved a series of small squares or rhombs and which had been so well manipulated as to give the appearance of basketry or of netting. Close study, however, of both these forms of surface treatment on sherds sufficiently large for observation, shows that they consist of repeated designs or patterns, in some cases more or less broken or overlapped. The fragments of the bottoms of jars shown on pl. XXXVII, *a*, *b*, are especially deceptive, both having the appearance of basket impressions, but which in fact were stamped as in the case of the other sherds referred to. The last sherd to which allusion is made, which is part of a vessel that had been considerably worn (pl. XXXVII, *c*), shows what appear to be the joints of the coiling process which the stamping had not wholly obliterated.

Incised Decoration.—The last type of pottery decoration to be considered is represented by the incised ware, or by a combination of incised and stamped. This method of ornamentation was applied chiefly to the upper part of bowls, forming a band below the rim; but a notable exception is the large jar to which allusion has already been made (pl. XVII, *b*), which is coarsely incised from the neck to the middle of the body with bold, broad, parallel angles, the lines forming the alternate groups of angles being long and short, and the apex of the outer angles of the alternate groups pointing respectively upward and downward. The scoring of the clay of this receptacle was done with a round-pointed instrument. In addition to two opposite rows of five nodes, each forming the decorative feature of the rim, there are, between these rows, two pairs of larger

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nodes, also opposite each other, which evidently were designed to facilitate the lifting of the vessel, and therefore are a form of the knob handles already described. We may here mention that the clay of which this interesting jar was modeled was liberally tempered with shell, small flakes of which are visible inside and out.

The patterns employed in the incised work (pl. XVII, *b*; XIX; XXXVIII–XLII) consist of both straight and curved lines, scrolls, fret-like figures and concentric circles, worked out in varying combinations and in a few cases accentuated with punctate dots or with impressions made with the end of a cane-stalk. In some examples the lines, whether straight or curved, are extremely crude, having been etched with little control of the implement employed; in other specimens the workmanship is well executed and the result pleasing. It is not always possible to determine the kind of implement used in making the incised ornamentation, but some of the designs no doubt were produced by means of a graver of cane, the lines of which are quite apparent. In other examples it seems equally evident that anything handy might have been employed for scratching the lines, like a stick or a twig, and while sometimes no attempt was made to smooth the rough edges, the scorings were

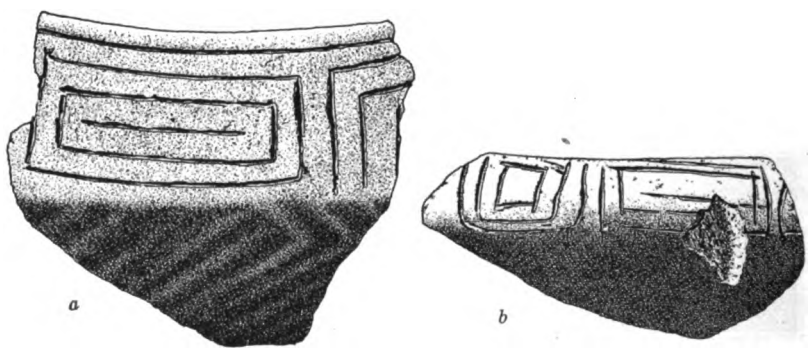

FIG. 48.—Sherds showing incised ornamentation.

often carefully routed, leaving the incisions clear and sharp. In two of the specimens illustrated (pl. XXXVIII, *a*, and XXXIX) the surface was pressed after the design was incised, as if to smooth away the roughened edges caused by the graving tool. In several sherds the etching, or more properly scratching, of the orna-

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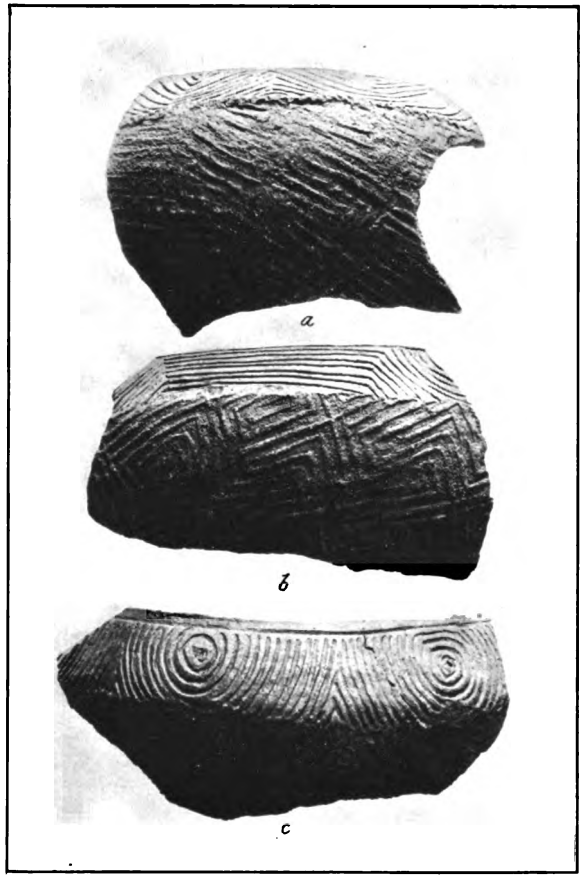

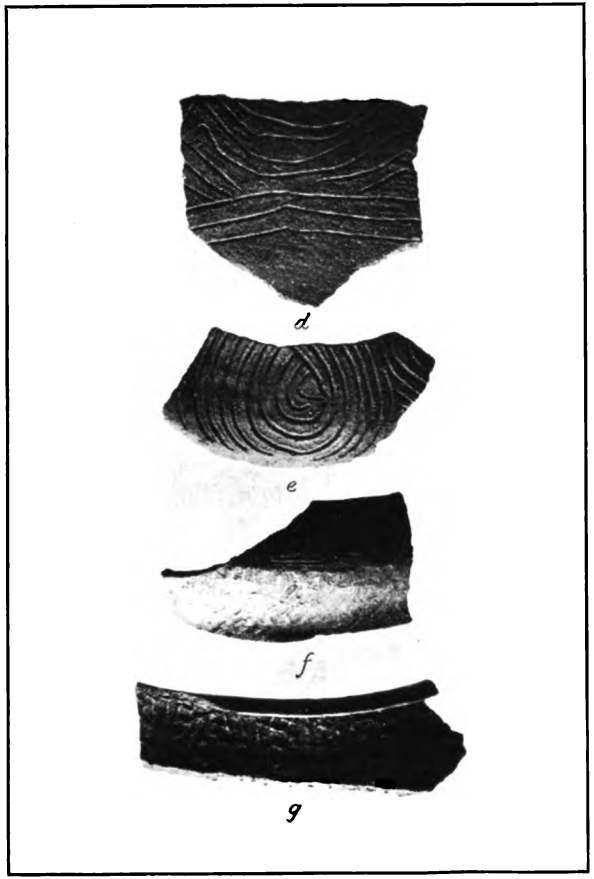

SHERDS EXHIBITING INCISED OR INCISED AND STAMPED ORNAMENTATION

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mentation was effected with a sharp implement, in several examples illustrated (pl. XXXVIII, *d*, *i*, *j*, *k*, and fig. 48, *b*) the work having been done so crudely as scarcely to be worthy the effort of children.

While incised work was confined usually to the rims and the exterior portion of the necks of bowls, an exception is noted in a single sherd of a jar of reddish ware that had been scored rather deeply with parallel diagonal lines *within* the neck.

Regardless of the skill or the lack of skill exhibited by individual potters of Nacoochee, they manifested high regard for the ornamental, for only in exceptional instances did they fail to embellish their earthenware vessels with the best their esthetic sense inspired. Indeed they devoted as much attention in this respect to some of the coarsest ware as to the finest products of their ceramic art. In view of this fact it is strange that these people paid no attention to ornamentation of their pottery by painting, the painted effigy vase hitherto described doubtless being intrusive.

MISCELLANEOUS POTTERY OBJECTS

Certain pins or plugs of earthenware, two of them entire (fig. 49), the remainder represented only by stems and heads, are among the earthenware objects from Nacoochee. Such plugs are supposed to have been used to keep open the freshly-pierced lobes of the ears preparatory to the insertion of permanent ornaments of shell or other material. Such ornaments are mentioned and illustrated in connection with the description of shell artifacts (p. 93).

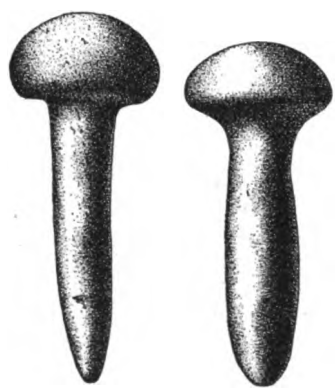

FIG. 49.—Ear-plugs of earthenware.

Beads of pottery are uncommon, only three having been found (fig. 50). The largest of these (*a*) is tubular, eleven-sixteenths of an inch long and painted red outside. Probably this was not designed originally as a bead, but was cut from the broken stem of a pipe. The

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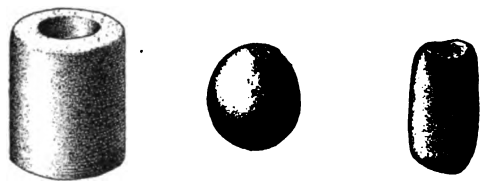
other two, however, were originally made as beads. One (*b*) is almost spherical, with a greater diameter of half an inch, and is of the reddish color of the burned clay; the other (*c*) is elongate, five-eighths of an inch in length, and flattish; both are crudely made, no attention having been given them beyond rolling or patting with the fingers.



a *b* *c*

FIG. 50.—Beads of earthenware.

A biscuit-like object of pottery, 1¾ in. in diameter and averaging three-quarters of an inch in thickness, rudely modeled and blackened by firing (pl. XXII, *e*), may have served the same purpose as some of the discoidal stones to be described.

Discs chipped or rubbed from potsherds were very common throughout the mound, having been so easily made that evidently little care was taken to preserve them. In diameter they range from about three-quarters of an inch to 3¼ in. and are of varying thickness. Sherds of any kind were used, little effort having been made to select well-finished fragments or those bearing attractive patterns; indeed in most cases the discs are of crude ware, indicating that the sherds were picked up at random and that perhaps weight rather than quality or finish was the desideratum. As might be expected, there is a greater proportion of ornamented than of plain pieces. Pottery discs of this kind are generally supposed to have been used in gaming. Owing to the disparity in their sizes, it may be presumed that the smallest ones were employed as counters. A few examples are shown in plate XLIII. These objects grade into a class of rude stone discs to be described, and in all probability were used for the same purpose.

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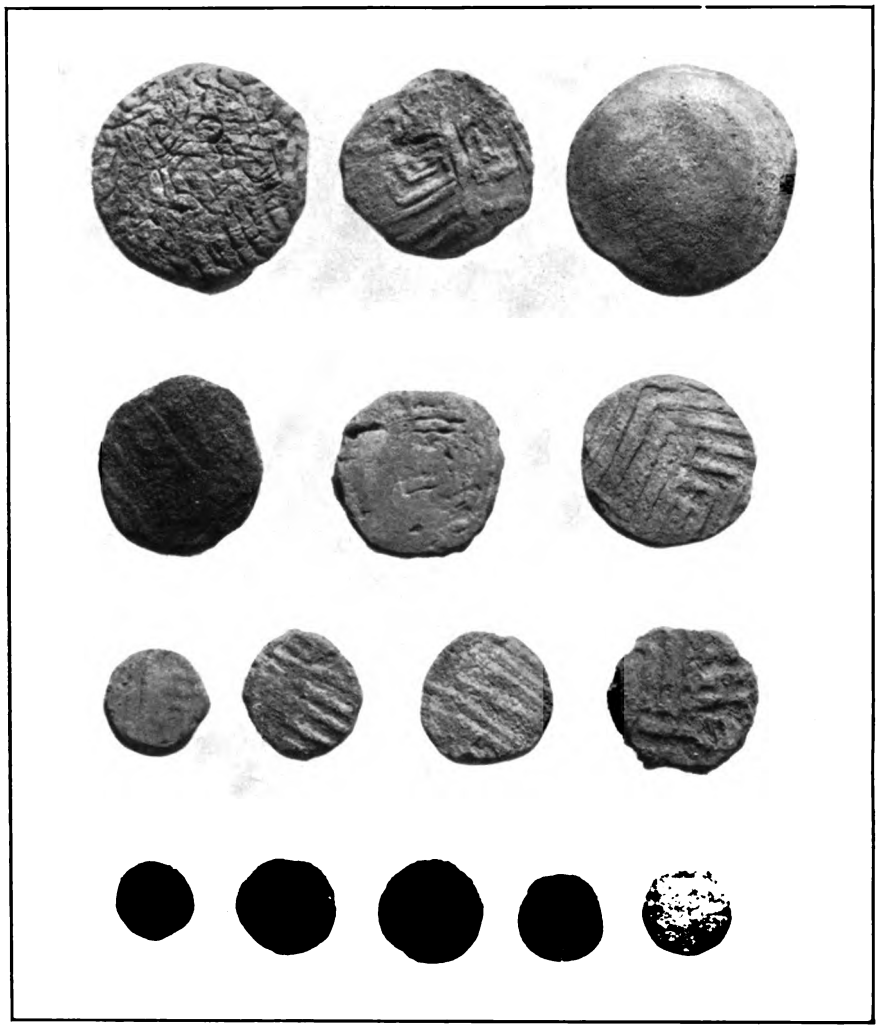

DISCS FASHIONED FROM POTSHERDS

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Smoking Pipes

Pipes of Earthenware

Whatever the esthetic attainments of the Cherokee of Nacoochee as exemplified by their pottery, they probably reached the height of their artistic ability in the manufacture of smoking pipes of earthenware and of stone. Writing of Cherokee pipes nearly a century and a half ago, Adair said:

"They make beautiful stone pipes; and the Cherokee the best of any of the Indians: for their mountainous country contains many different sorts and colors of soils proper for such uses. They easily form them with their tomahawks, and afterward finish them in any desired form with their knives; the pipes being of a very soft quality till they are smoked with, and used to the fire, when they become quite hard. They are often a full span long, and the bowls are about half as large again as those of our English pipes. The fore part of each commonly runs out with a sharp peak, two or three fingers broad, and a quarter of an inch thick—on both sides of the bowl, lengthwise, they cut several pictures with a great deal of skill and labor, such as a buffalo and a panther on the opposite sides of the bowl; a rabbit and a fox; and, very often, a man and a woman *puris natur alibus*. Their sculpture cannot be much commended for its modesty. The savages work so slow, that one of their artists is two months at a pipe with his knife, before he finishes it. . . . The stems are commonly made of soft wood about two feet long, and an inch thick, cut into four squares, each scooped until they join very near the hollow of the stem. . . ." [1]

The crowning example of artistry in pipe manufacture by the Nacoochee people is a specimen not found by our expedition but was recovered by Captain Nichols, who in 1870 unearthed the copper celt and other objects near the western base of the mound, as hitherto described. The pipe later came into the possession of Captain Nichols' daughter, Mrs George F. Payne, of Atlanta, from whom it was acquired.

The accompanying fig. 51 presents two views of this object, which is light-brown, the color of the clay, smoke-blackened on one side in firing. The bowl is covered with pyramidal facets (a favorite device in pipe ornamentation), and on the rear or smoker's

[1] James Adair, History of the American Indians, p. 423, London, 1775.

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side is surmounted by a grotesque bird figure with diminutive body, large beak, erect ears, and bulging eyes. The front of the bowl rim curves upward to a point, and the short stem is finished with a heavy serrated flange. The inside of the bowl shows the irregularly vertical marks of a finishing tool, and the stem opening,

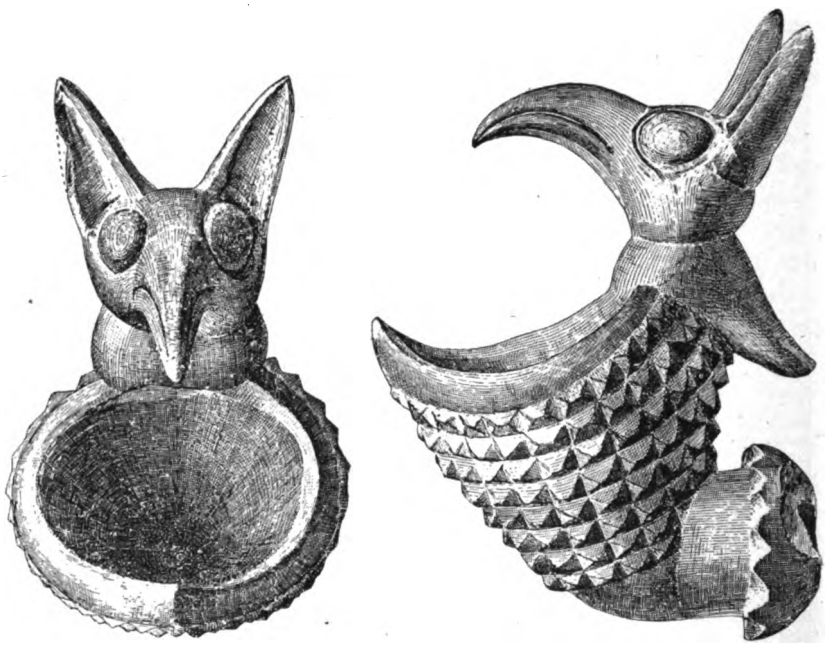

FIG. 51.—Earthenware effigy pipe.

which tapers moderately toward the bowl, exhibits faint horizontal markings as if scratched either with a tool or in twisting the stem in place. This fine pipe, which has been illustrated by McGuire[1] and by Holmes[2] from a cast in the National Museum, was probably found subsequent to 1873, the date of publication of C. C. Jones' "Antiquities of the Southern Indians," as it is not mentioned therein with other objects found by Captain Nichols at Nacoochee. McGuire's illustration is somewhat misleading in that it represents

[1] J. D. McGuire, Pipes and Smoking Customs of the American Aborigines, *National Museum Report for 1897*, fig. 237, p. 619, Washington, 1899.

[2] *Fifteenth Annual Report of the Bureau of American Ethnology*, pl. cxxv, Washington, 1903.

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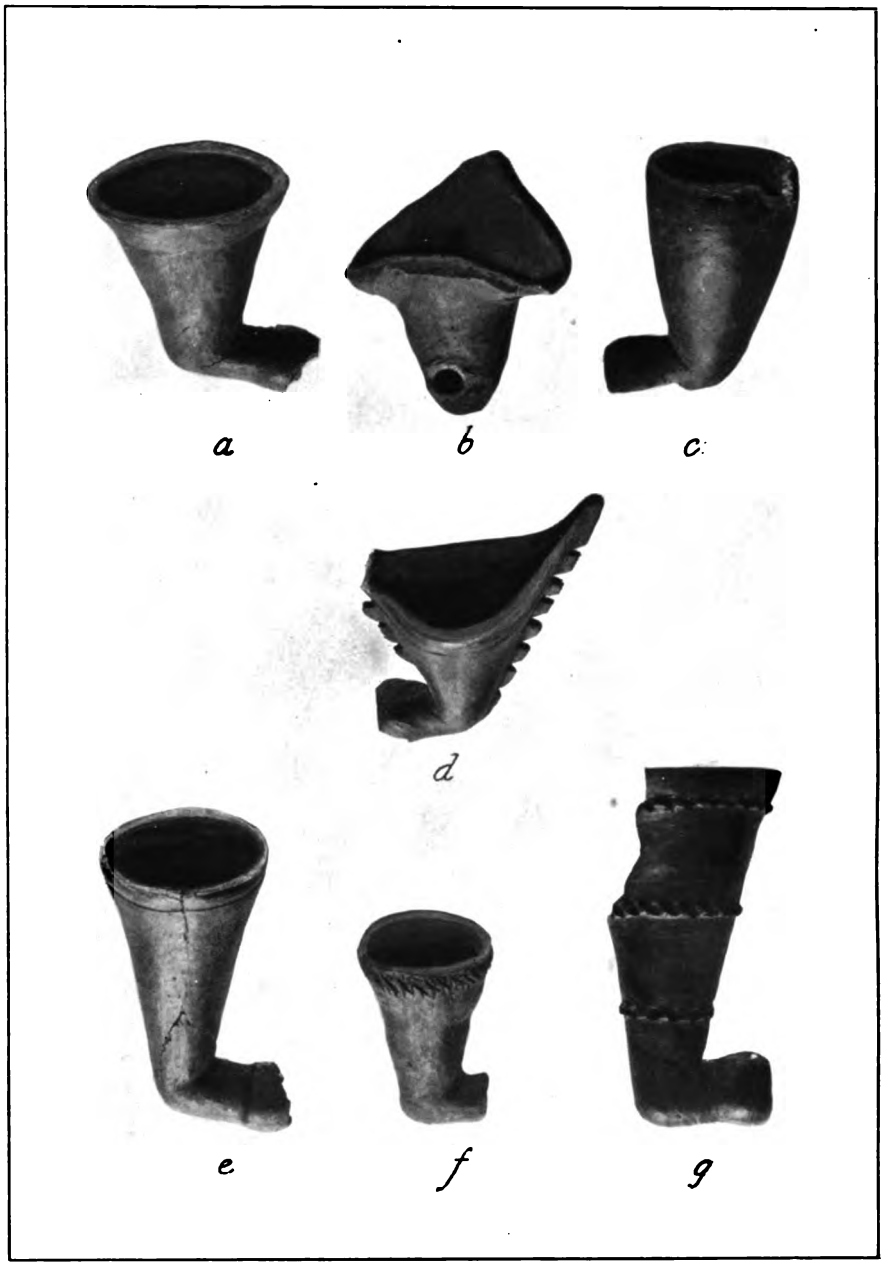

EARTHENWARE SMOKING PIPES

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the rim of the pipe-bowl as forming the legs of the bird, whereas they have no connection. The same writer states that the serrated stem band and the pyramidal ornaments on the bowl "all appear to have been cut out of the pottery subsequent to its baking." Whatever may be the appearance of the cast made years ago for the National Museum, the original pipe in the Museum of the American Indian, Heye Foundation, certainly affords no basis for any belief other than that the facets and serration were carved in the clay before the object was fired.

This effigy belongs to a favorite form of pipes from this region, the shape of the bowl resembling that of a lily, two plainer examples of which are illustrated in pl. XLIV, *b*, *d*. With the upward flare of the rim eliminated, we have another form (*a*, *e*, *g*), also common at Nacoochee, which in turn merges into other pipes similar in type but varying more or less as to proportion and ornamentation. The stems are invariably short, and almost without exception have a knobbed mouthpiece, although in a few specimens the knob had been broken off, the rough edges ground away, and the pipes no doubt made to do further service. The need of a thickened end to give strength to the pipe when the cane stem was forcibly inserted is apparent. The rather heavy pipe-bowl illustrated in fig. 52 was supplied with a cane stem only.

FIG. 52.—Earthenware smoking pipe.

The quality of the clay of which the pipes were made, as well as the tempering, is variable; some of the specimens are of excellent ware and were carefully and artistically modeled, but others are of the crudest description, especially two found with Burial 12, as if they had been designed to serve a temporary or funerary purpose. The finer ware seems to have had little or no tempering agent, and like the pottery utensils above described, paint was not employed as a decorative medium, if one may except three small pipe fragments on which traces of red paint, probably hematite, are seen.

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One of these is part of the head of a bird whose mouth is colored red within.

The decorative features of some of the pipes are shown in illustrations to which attention has already been directed. Unfortunately many other examples are in fragmentary condition, but with knowledge of the form of some of the pipes it is not difficult to make an approximate reconstruction, in the mind's eye, of the complete features of some of the effigy and other figures with which the makers of the pipes embellished these cherished objects.

Most notable among the sculptures in clay is that of the bird on the pipe to which attention has already been given, and unfortunately this is the only complete specimen. Of sherds, however, we are able to present a few examples of bird forms, all but one of which are represented with serrate crests and all with prominent eyes. There is no doubt that these fragments (pl. XLVII) are parts of the rims of pipe bowls. A wolf-like head which, judging by the area of separation from the ware to which it had been attached, was probably part of a pipe; at any rate the curvature of what had been the point of contact is such that the head must have been fastened to a very small body. This head (shown in the central figure of pl. XLVII) bears traces of red paint.

We have already called attention to the use of a field of pyramidal facets as a feature of pipe ornamentation. Of this device several examples were preserved, varying in no particular from the ornamentation found on the body of the fine pipe first described, but applied also in the form of decorative bands or borders and merging into either closely grouped or isolated nodes of conventional or irregular form (pl. XLVII–XLVIII). Punctate or pressed markings, perforations, incisions, and pits were employed likewise as a means of ornamenting the pipe bowls, the treatment in some specimens resembling that of the rims of certain domestic utensils. Only a few of the many applications of these processes can be illustrated.

Perhaps we may regard the loop that terminated the rim of various pipes to have been more useful than ornamental, since it served as a means of attaching the pipe to the person. A few forms of plain loops are presented in pl. XLVII. We have already observed

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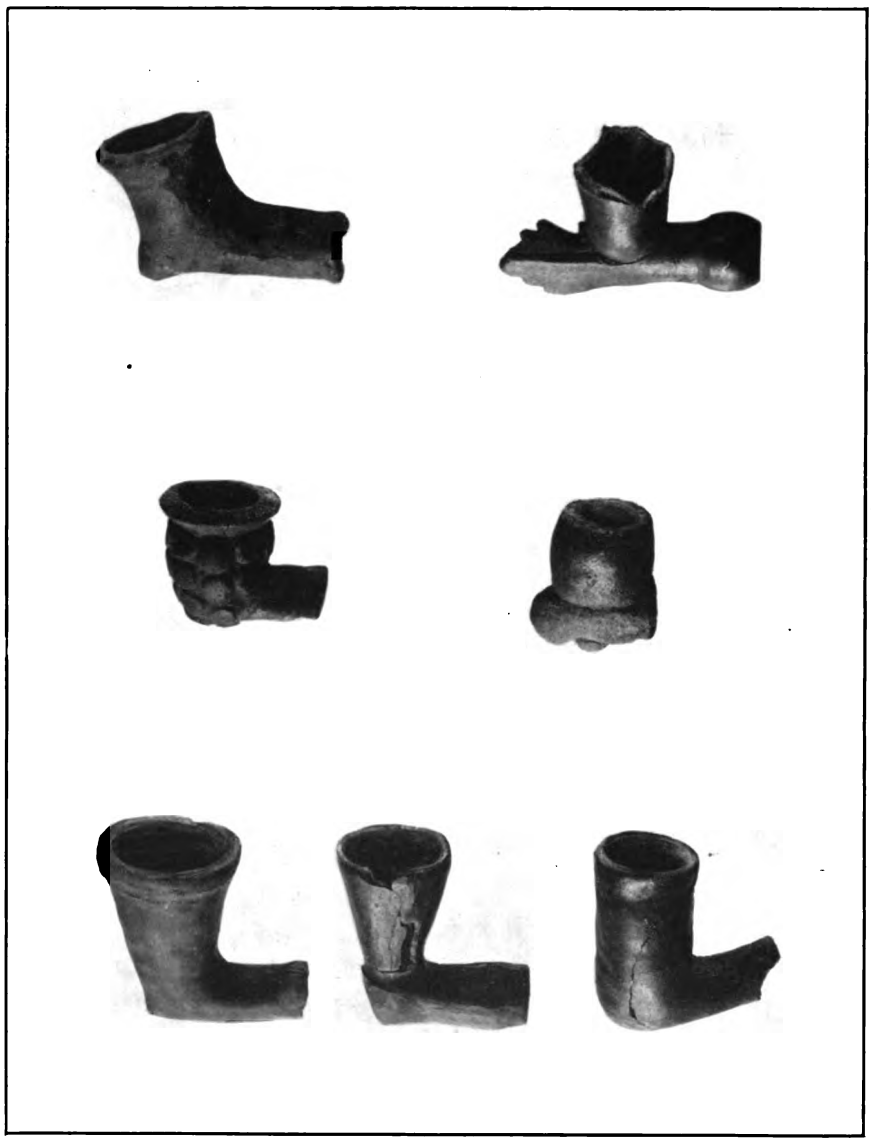

EARTHENWARE SMOKING PIPES

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that three of the bird heads which formed the terminal projections of certain pipe rims bear apertures through the beaks, while another has the eye completely punctured, evidently likewise to afford a means of suspension.

TRADE PIPES

Various fragments of ordinary white clay trade pipes were found in the upper part and under the slopes of the mound. One of these bears a part of the manufacturer's mark on each side of the heel, the letters seeming to be an M and a W, but even these are not distinct.

STONE PIPES

While there are a few excellent stone pipes from Nacoochee, the specimens of this material as a whole do not compare favorably with those of earthenware. The catlinite pipe shown in pl. XLIX, *a*, found with Burial 2, lying 2 ft. 9 in. beneath the surface (see pl. XIV, *a*), is noteworthy both by reason of its form and finish and because it is the only specimen of pipestone found in the mound; indeed Jones (p. 407) states that he "failed to discover a single instance of the use, among the Georgia Indians, in ancient times, of the genuine red pipestone or catlinite." This pipe is 3¾ in. in length, fairly well polished, with the two sides faintly and crudely etched, and with a cross scratched in the base. The bowl is not smoke-stained, nor does it show any marks of tooling; the opening of the mouthpiece, however, retains the round markings caused probably by turning the stem in the socket. The serrated end of the body suggests the tail of a conventionalized bird. A hole has been drilled from both sides, midway of the body, evidently to afford means of suspension by a thong on which had been strung certain Marginella shell and glass beads, found in direct association, as before described (pp. 39–40).

Lieutenant Timberlake[1] speaks of a Cherokee calumet of catlinite in the eighteenth century as follows:

"During the dance, the peace-pipe was prepared; the bowl of it was of red stone, curiously cut with a knife, it being very soft, tho' extremely pretty when polished. Some of these are of black stone, and some of

[1] Memoirs, p. 39, London, 1765.

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the same earth they made their pots with, but beautifully diversified. The stem is about three feet long, finely adorned with porcupine quills, dyed feathers, deers hair, and such-like gaudy trifles."

In point of finish the finest stone pipe from Nacoochee is of steatite and was found by Captain Nichols prior to 1873 in the field near the western base of the mound. This pipe (pl. L, *b*) is delicately wrought, the walls of the bowl being only about a thirty-second of an inch in thickness. It is highly polished, having much the appearance of glazed pottery. As in the case of the earthenware pipes generally, this one also has a flange at the end of the mouth-piece. Following the outer curve, the bowl measures nearly 1½ in. from the rim to the heel. This pipe, which was procured from Mrs. George F. Payne, of Atlanta, is figured by Jones and also by McGuire,[1] but neither illustration gives an adequate impression of the excellence of its workmanship. There are two other dark steatite pipes in the collection (pl. L, *a*, *c*), of approximately the same form, but heavier and of less careful finish. One of these has a very narrow lip, and the sides of the mouthpiece are slightly squared. The flange seems to have been broken off, only the edge remaining to show that the fractured end had been rubbed down to fit the pipe for further use. Both of these pipes were found in the refuse of the mound.

Another excellent pipe, of greenish-gray steatite, is shown in pl. XLIX, *b*. It measures 4¼ in. from mouthpiece to heel, the total length being 5 inches. This pipe was found with Burial 4 (pl. XV, *a*).

Rather crude in manufacture, jar-shaped, with heavy walls, is the gray steatite pipe illustrated in pl. XLIX, *e*. Like the fine little pipe of similar material, this specimen also belonged to the Payne collection, but it is not positively known to have come from the Nacoochee mound, although another of the same general form, but of hard stone, was found by us at the site.

Still another steatite pipe, with somewhat flaring sides, outcurving rim, and rather heavy walls, resembles some of the pottery forms. Its stem is broken off.

[1] C. C. Jones, Antiquities of the Southern Indians, pp. 410–411, pl. XXIV, New York, 1873. J. D. McGuire, Pipes and Smoking Customs, op. cit., p. 455, fig. 79, Washington, 1899.

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EARTHENWARE SMOKING PIPES

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The brownish pipe of the same material represented in pl. L, *e*, is rather interesting by reason of the unusual angle formed by the bowl and the stem.

Interesting on account of its form, which is that of the claw of a bear or other animal, is the schistose pipe shown in pl. XLIX, *d*. Its bowl is very small, and the entire finish, excepting that of the convex surface of the front, is rather rough.

Exceptionally crude is what is probably an unfinished pipe of porous ferruginous granitic stone, almost of the consistency of

FIG. 53.—Part of a pipe of coarse sandstone.

coarse pottery, and stemless. The inside of the bowl and of the stem opening is smooth-finished, but the exterior is so rough as to suggest the primary stage of manufacture. Possibly the development of a crack extending halfway round the pipe was the reason for its rejection. It exhibits no smoke-blackening.

Part of another rude pipe (fig. 53) is of coarse red sandstone, broken almost through its center in such manner as to expose the entire interior. Smoke-blackening indicates that it had been used.

Possibly the cylindrical steatite object shown in pl. L, *d*, one and nine-sixteenths of an inch in length, and drilled or otherwise worked in one end to a depth of seven-sixteenths of an inch, may have been designed for use as a pipe bowl, although this is not certain.

The parts of two stems illustrated in *f*, *g*, of the same plate are

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of interest as showing that stone pipes had been provided with means of suspension—an uncommon feature of Nacoochee stone pipes so far as our collections show.

FIG. 54.—Part of a pipe bowl severed by cutting.

The basal end of a pipe of a compact brownish stone, cut from the rest of the bowl for some unknown reason, is shown in fig. 54.

OBJECTS OF STONE

Discoidal Stones.—Of all the objects of stone found at Nacoochee, the most numerous are certain discs or discoidal stones, fashioned usually from any water-worn or weathered stones, shaped by pecking or by rubbing, or by employing both of these processes. In most cases the rounding-out process by pecking or battering the edge was done rather roughly; in others the stone was further rounded either by modifying the natural pebble by slight rubbing on the prominent edges, or by rubbing the edges of the flattish stone that already had been more or less rounded by pecking or battering. Discoids of this type are of great variety of size and finish, their diameter ranging from a fraction of an inch to 4½ in. They were found throughout the mound, usually in the refuse, but in a few cases associated with burials. Their function is not certain, nor is it known that the large and the small were used for a similar purpose; but from the crudeness of some of them, and their general resemblance in size and form to the pottery discs already described, it is not improbable that they likewise were employed in gaming. Indeed, from the softness of the stone of which most of these discoids are made, and the fact that they bear no sign of use as tools, it is likely that they were employed in games rather than for more practical purposes. A selection of these discoids is shown in pl. LI.

The discoidal stones of this class to which the natives gave most attention merge into another and less common form, made usually of a dioritic stone, carefully fashioned and polished. These vary similarly in size and form, some of them being of equal diameter on both faces, others having slightly or considerably beveled sides, and all having more or less rounded edges (pl. LII). A specimen of this type, of fine-grained granitic rock, was found with Burial 1.

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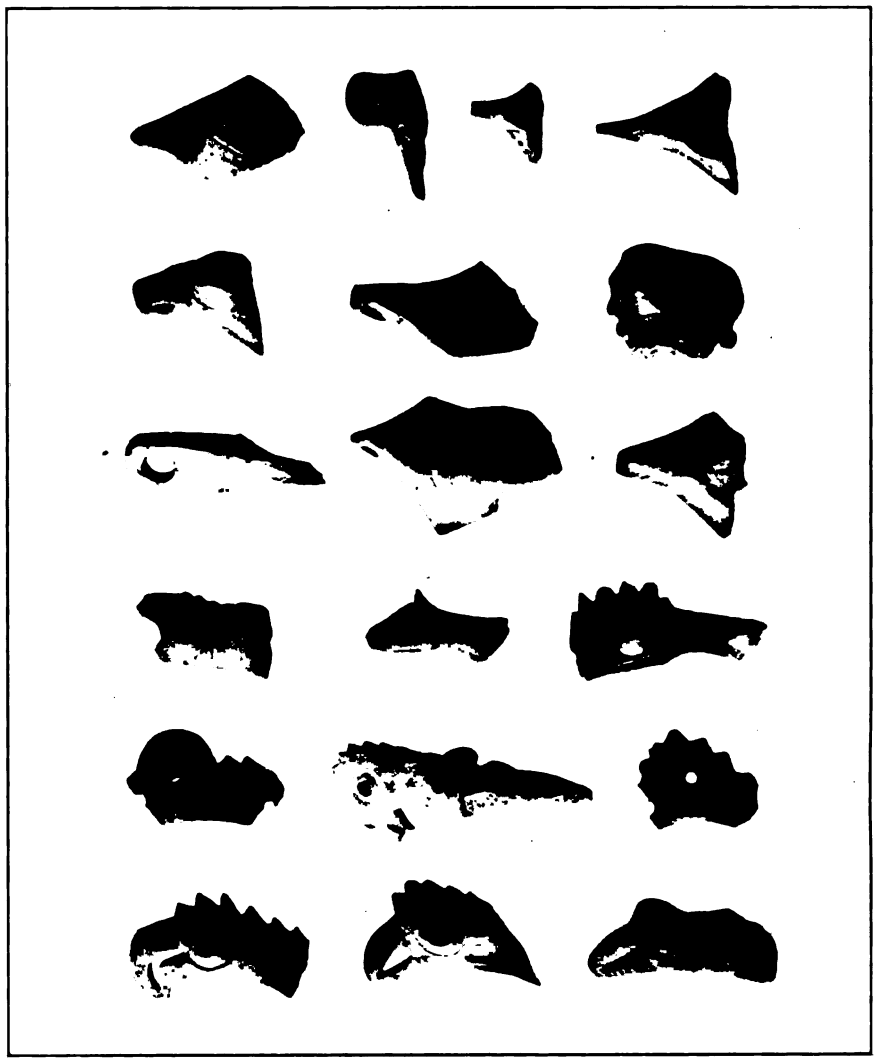

PARTS OF EARTHENWARE PIPE RIMS SHOWING ORNAMENTATION

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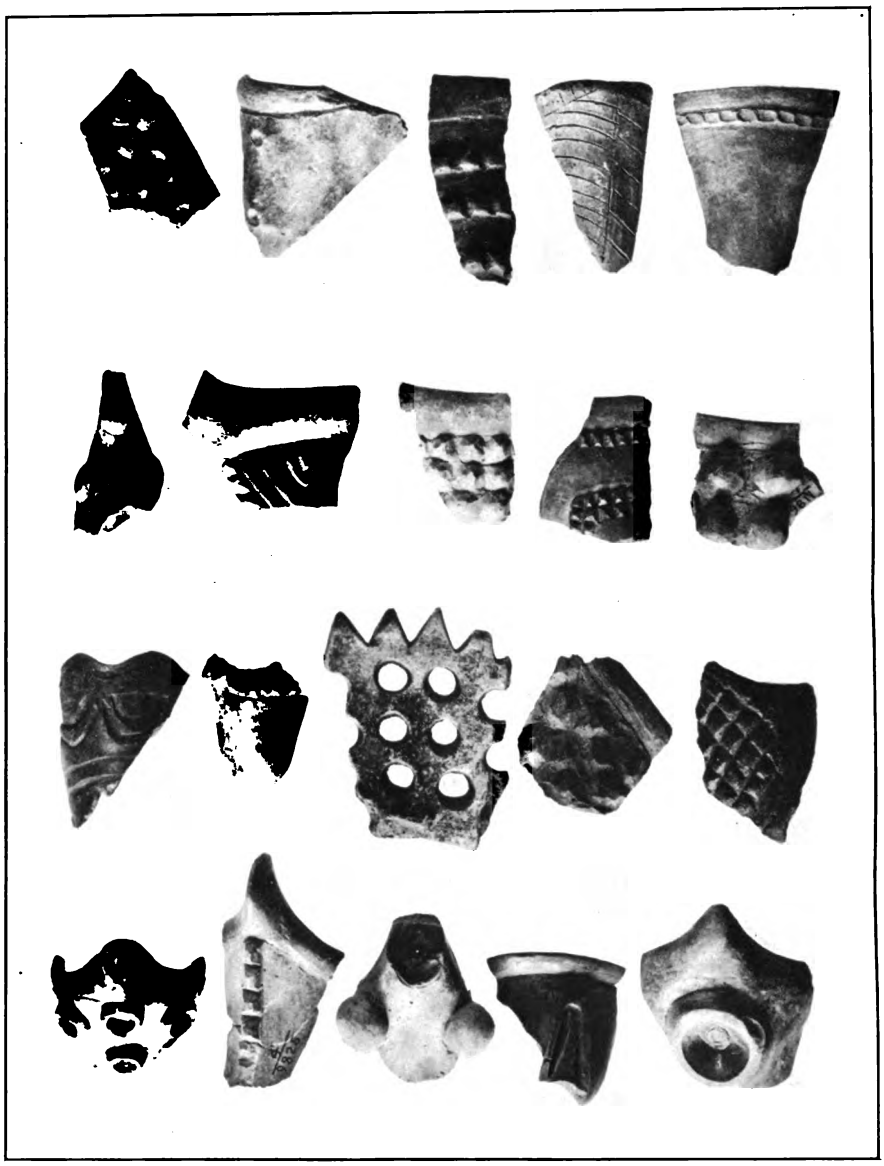

PARTS OF EARTHENWARE PIPE RIMS SHOWING ORNAMENTATION

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Still another class, closely approaching the last in form, but made of quartz, includes one specimen almost semiglobular in shape, while two others are identical in form with some of the dioritic discoids, but are of calcareous stone and seem to have been subjected to fire. Examples of this class are illustrated in pl. LIII.

It is difficult to reach any conclusion other than that the discoids flattened on one side and rounded on the other, if not those with both faces more or less flattened, were used in playing the chunkey game, as described by Timberlake, who from personal observation among the Cherokee in 1761, wrote:

"The greater part resolved to amuse themselves at a game they call nettecawaw; which I can give no other description of, than that each player having a pole about ten feet long, with several marks or dimensions, one of them bowls a round stone, with one flat side, and the other convex, on which the players all dart their poles after it, and the nearest counts according to the vicinity of the bowl to the marks on his pole." [1]

Some of the discoids of the class first described are of steatite, in no case so well finished as the adaptability of this material to the shaping processes would have made possible. A few of the steatite discoids are pitted, and in addition to the pitting two of the specimens have rudely incised lines radiating from the center, while one of them has also faint, shorter intervening lines (pl. LIV, *e*). This crude attempt at ornamentation was not confined to the steatite discoids, however, as a small one of porous ferruginous granitic stone, tufa-like in appearance, bears similar diametric markings (pl. LIV, *a*).

Other pitted stones are small (averaging 1½ to 1¾ in.), clumsily made (pl. LIV, *d*, LV, *g*), and with a single exception are of sandstone or a granitic stone, the exceptional example being dioritic (pl. LII, *c*). In only one specimen of these objects is the pitting in one side only.

Of similar material and approximate size are perforated discoids (pl. LIV), some of them also grooved on the face, and one example having been perforated after breakage (*c*), care not being taken to

[1] Henry Timberlake, Memoirs, p. 77, London, 1765.

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drill the hole centrally. The rude pendant-like specimen of this type (*i*) is of steatite, as also is the much better finished annular stone (*g*), on the faces of which ornamentation has been attempted by scratching.

Another class of pitted stones, evidently bearing no relation to those described, will be referred to later.

Abrading Stones.—The abrading or rubbing stones are not very numerous, nor do they offer any unusual types. They range from natural pebbles of soft sandstone, similar to some of the discoids (the edges worn by abrasion with other objects and the surfaces in a few cases being irregularly scored as if in pointing implements), to more or less irregular water-worn stones on which no workmanship had been expended in order to adapt them to the purpose for which they were designed. One fragment, judging by the stains on its only smooth face, was used for grinding hematite.

A rather interesting stone of this class, measuring 11 by 8 by 4½ in., has a shallow groove, three-quarters of an inch wide, extending from one end of its smoothest face to the other, as if used in rounding or smoothing the edges of such objects as the smaller discoids above described, or for smoothing or pointing the ends of wooden objects.

Pottery Polishers.—Numerous small unworked pebbles, chiefly of quartz, were found throughout the mound, and two were associated with Burial 2, together with two diminutive stone discoids. These stones are of the class used for rubbing pottery before firing; they differ in no wise from the pottery-polishers so common at archeological sites wherever earthenware has been made, and which are still in almost daily use by our Pueblo Indians at the present time. What may have served, at least secondarily, as a pottery polisher, is a small spherical object of steatite (pl. LV, *i*), which will be mentioned later in referring to specimens made of that material. A small, dark, slate-like, triangular stone, an inch in length, thick at one edge but beveled at the other, may well have served the purpose of indenting some of the ornamental motives on the rims of certain pottery vessels.

Celts.—Considering the amount of exploratory work done at

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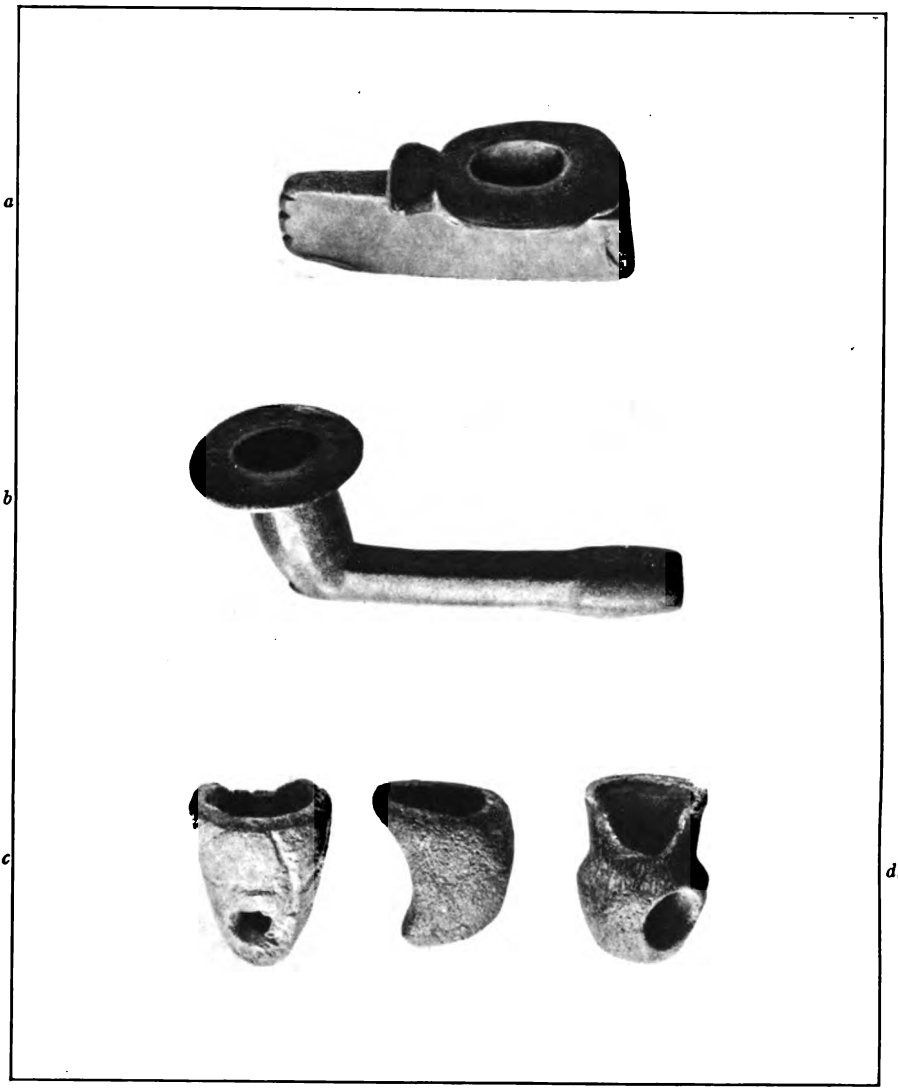

SMOKING PIPES OF STONE

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Nacoochee, the stone celts[1] recovered (all but one of which had been deposited with the dead) are not numerous, and in this respect are not at all in keeping with the highly-finished discoids, for example, which the mound produced. But what the ten celts lack in number is met by the excellence of the workmanship (pl. LV, LVI). All are either of hard, compact stone, of the dioritic or granitic kind from which most of the highly finished discoids are fashioned, or of slate, and all but one (pl. LV, *e*) are perfect or nearly perfect in condition. Three are almost or quite flat and round or elliptical in section at the poll, and the poll of the small damaged celt was probably of like form; two are only slightly rounded, and likewise are elliptical in section; the poll in three is flattish and elongate, while that of another, battered shapeless by use of the celt as a hammer, was probably also of this form. The smallest celt measures 4 in. in length in its broken condition, 1¾ in. in width at the blade end, and 1 in. in maximum thickness; the next largest, flat, thin, and chisel-like (pl. LVI, *e*), and perforated near the poll, is 6¾ by 2⅜ by ⅝ in. in corresponding dimensions; the largest celt measures 8¼ by 3¼ by 1¾ in., while two others are only slightly smaller, if not so heavy. Four of the celts, including the perforated specimen as well as the largest one of the series, were found with Burial 53; others were associated with Burials 22, 56, 59, 60, and 63, while one, it may be recalled, was found apart from a burial. The perforated celt referred to possesses an interesting feature in that it shows a whitened band, nearly 1½ in. wide and slightly diagonal, commencing just below the perforation, marking the former attachment of a handle; and another implement of this kind (pl. LVI, *f*) is similarly marked by slightly oblique lines of abrasion from the edges of the handle, as referred to in describing the copper celts.

Regarding the limited number of the celts, it should be borne in mind that, Nacoochee having been occupied far into the historical period, its inhabitants must have employed tools and implements of civilization long before the abandonment of the site, consequently tools of stone doubtless had been superseded by those of metal many years before. On the other hand, while fragments of celts

[1] See footnote, page 23.

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and chisel-like implements were found, they were not sufficient in number to account for the fact that apparently at no time in the history of Nacoochee were many stone implements in use. It should also be noted that most of the celts were unearthed at considerable depth. A few fragments of small celts of fine-grained, granitic stone were found in the mound débris, but these afford no additional information. Not a single grooved axe was recovered; but an axe of this kind, found in one of the stone graves opened by Captain Nichols, is now in the Museum of the American Indian, Heye Foundation.

Among the chisel-like objects not described above are the well-finished and perforated specimen shown in plate LV, *d*, as well as a number more or less fragmentary, all small in size, and for the greater part thin and delicately finished. Among these fragments are represented three chisels, one edged at both ends, perfect except at the narrower end, measuring 3½ in. long, 1 in. wide at the wider blade-end, and seven-sixteenths of an inch thick at the middle. The stone is very hard and compact, apparently granitic, and dark brown in color. The other broken implements of this type are not sufficiently complete to afford any interesting feature, save one of dark-greenish stone which has been used slightly for rubbing or polishing at the broken poll end.

A small chisel of hard, yellowish sandstone, complete, measuring $3^{11}/_{16}$ in. long and five-sixteenths of an inch in width as well as in maximum thickness, is of natural formation ground to an edge at one end (pl. LV, *f*). Another small chisel or celt, apparently of schist, 3 by 1¾ by ⅜ in., showing slight sharpening at the broader end, is also of natural form; both ends are broken, the broader end so fractured as to carry away the edge opposite the sharpened edge mentioned.

Still another celt-like object (pl. LV, *c*), of dark-gray granitic stone, has a broken but formerly sharpened edge at the narrower end. The opposite edge has evidently been grooved on each side and then broken off. The longer edges of the implement have been beveled, probably through abrasion during use as a rubbing stone, thus suggesting its application to many uses.

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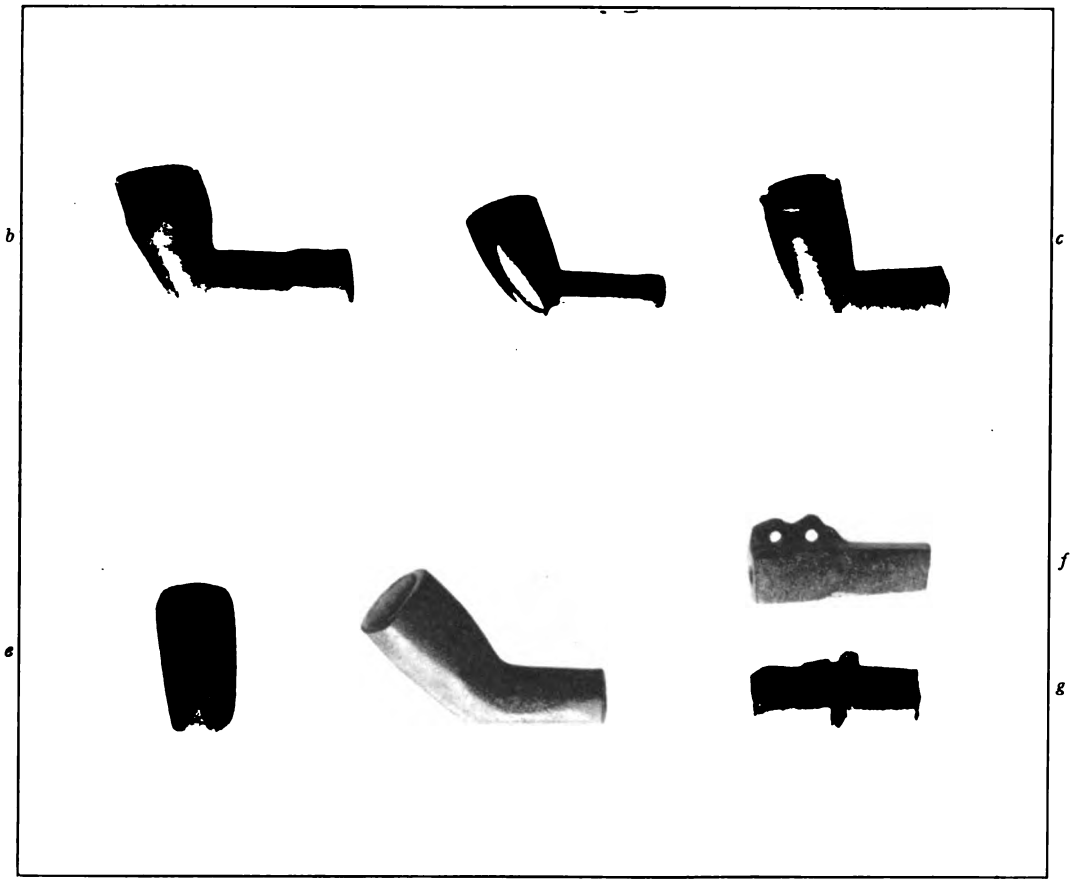

PIPES AND PARTS OF PIPES OF STEATITE

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Steatite Objects.—Deposits of steatite are found in adjacent mountains, and although the inhabitants of Nacoochee made use of them, comparatively few objects of this adaptable material were found. We have already mentioned the rude annular and discoidal objects of soapstone, as well as the utilization of this material in the manufacture of pipes.

Two small fragments of large steatite vessels were found in the mound débris; likewise half of a diminutive vessel which, when complete, measured about 3½ in. in diameter and 1⅝ in. in height, and a portion of a crude annular object only slightly smaller in dimensions. More interesting is a coarse micaceous steatite object of unknown use, of the so-called "plummet" variety, 4 in. in length, 1½ in. in maximum diameter at the middle, tapering to three-fourths and seven-eighths of an inch respectively at the ends, around one of which, half an inch below, a shallow and narrow groove has been cut as if to provide means of attachment (pl. LV, *b*). A similar object, 2 1/16 in. long and three-quarters of an inch thick, was in the Payne collection, and if it did not come from Nacoochee, it is certainly from that vicinity. Its flat base has a shallow depression and its top is knobbed. Another, more like the first one described, is illustrated by Jones and mentioned as possibly "employed to weight the hand-line in fishing with a hook."[1] Still another object, of indurated soapstone like one of the fragments of vessels above described, is roughly spherical in form, 1 to 1½ in. in diameter, at one end of which a small boss or knob has been cut (pl. LV, *i*). From the fact that the under face of this object is smoothly worn, it may have been used in polishing pottery. It was found with Burial 2.

A steatite bead is mentioned on page 87, and reference has been made (p. 17) to the finding of a steatite ear-plug in a Nacoochee stone grave by Captain Nichols.

Considering the availability as well as the adaptability of the raw material, therefore, there was an unexpected paucity of steatite objects in the mound.

Pitted Stones.—Classed generally as pitted stones, or those which

[1] Jones, op. cit., p. 399, pl. XIX, 12.

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bear depressions in one or both faces, there are numerous objects in addition to the pitted steatite discoids previously described. These range from fairly large, roughly-fashioned mortars (almost too shallow to justify the name, however), to pebbles or bowlders sufficiently small to be held conveniently for pecking, pounding, and the like, the pitting having been designed to facilitate grasping. The materials range from hard, compact stone to soft sandstone.

The large mortars, if we may so designate them, measure roughly 10 by 10 by 6 in. and 11 by 6 by 5¼ in. respectively in greatest dimensions, while the depression in each is only about 1 in. in depth and 5 in. in diameter. The stone of which each is made is very irregular, no shaping having been done in order to make it symmetrical; indeed it would seem that the first field stone at hand in each case was adapted to the purpose intended. An exceptional mortar, a mere toy in size (pl. LV, *g*), has a depression only large enough to receive the tip of the forefinger. This specimen recalls the tiny crude earthenware receptacles made by or for children.

Most of the pitted stones, and especially those with depressions in both sides, were used as hammers, as is shown by the convenient manner in which the pitting fits the thumb and forefinger, and by the presence of at least one battered end. A few examples of pitted stones, however, are of soft material, such as ferruginous sandstone, mica schist, etc., hence they could not well have served as hammers or pounders; and still other examples are pitted so slightly that their intended function is not apparent, although some of these come within the class sometimes, for want of a better name, are called "nut-crackers." A small discoid of greenish stone, measuring only seven-eighths of an inch in diameter by five-sixteenths of an inch in thickness, the edge slightly beveled, is pitted in one face (pl. LII, *c*).

Hammerstones not pitted were found in considerable number, and are of several forms, depending on the shape of the pebble or bowlder, or on the use to which it was to be put. The simplest of these, of course, is the hard, more or less rounded, water-worn stone, not modified for the purpose of improving the shape, and battered usually at one end only. Others merge into the discoids,

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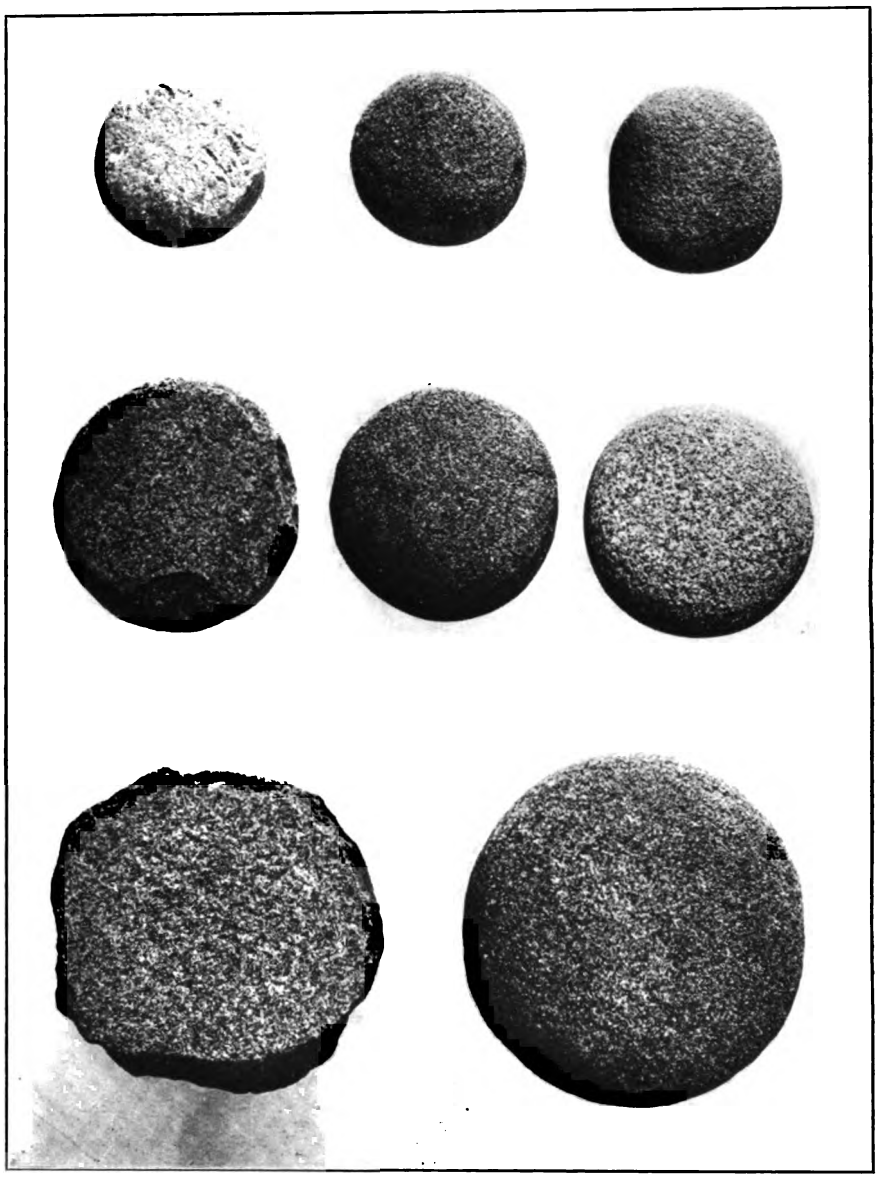

DISCOIDAL STONES PROBABLY USED IN GAMING

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and indeed there are indications that some of the hammerstones were primarily designed for use as discs but were spoiled in the process of manufacture. There are no hammerstones of unusual form from Nacoochee, all partaking of the character of those common to archeological sites generally.

Net-sinkers.—Various flat stones, deeply or shallowly notched in one or both sides, and of the form usually called net-sinkers, were found in considerable numbers among the refuse (pl. LVII). These vary in size from 2 in. in width by 3½ in. in length, to 3½ and 5 in. for the same dimensions, and there were others, represented by fragments, even larger. Sometimes the notch is relatively deep and smooth, in other specimens there is little more than a suggestion of notching. Lack of indication of battering of the edges by use against other stones shows that these objects were not designed as stone-working tools, but served some such purpose as that of sinking fish-nets in streams. Indeed the stone of which they are usually made is too soft to have withstood hard usage, although a few specimens, of harder stone, may have been rejected hammerstones subsequently notched for use as sinkers. The largest specimen of this general type, 6½ and 8 in. in medial diameters, is well battered at the narrower end, indicating its use as a hammerstone.

Ornaments.—Little in the way of stone ornaments was found at Nacoochee, even the burials being practically devoid of accompaniments of this kind, evidently because shell was more highly regarded for objects of personal adornment.

FIG. 55.—Steatite bead.

A crude object of laminated shale, shaped in the form of an arrowpoint by rubbing, but in no wise sharpened, may possibly have been used as an ornament, and a fragment of what appears to have been one of the wings of a bannerstone, or "butterfly gorget," found apart from burials, is the only object of this form unearthed.

Stone beads are entirely absent, excepting one of dark steatite thirteen-sixteenths of an inch in maximum length, tubular with slightly rounded ends, and neatly drilled from one end only (fig. 55). Jones (p. 235, pl. VI) mentions and illustrates a large stone bead as

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among the accompaniments of one of the stone graves opened by Captain Nichols.

A tiny object, seemingly of ferruginous sandstone, only an inch by three-quarters of an inch in length and width (pl. LV, *h*), having much the appearance of a miniature grooved hammerstone, may have been used for ornamental purposes, or possibly as a toy.

Chipped Stone Implements.—Two lanceolate blades (pl. LV, *a*; LVI, *b*) were found in graves, the smaller with Burial 13, the other with Burial 14. The latter specimen, of grayish slate mottled with quartz-like nodules, is 8¼ in. in length by 2 in. in maximum width; it is nicely chipped, thin, with finely serrated edges, and perfect in condition. The smaller, of bluish gray flint or chert, is only half as long; it is likewise relatively thicker owing to the presence of refractory humps in the stone that evidently could not well be removed without risk of breaking the blade. One of the points is missing.

The remaining chipped stone objects found at Nacoochee—knives or spearpoints, arrowpoints, etc., offer nothing new in form or character. The best of the arrowpoints are of chert or flint; they are elongate as a rule, with rather prominent central ridges on one or both faces, and are without barbs, but often the base is made concave to receive the end of the shaft. A few examples are nicely chipped, symmetrical in form, and thin in section. In length, they range from three-quarters of an inch to an inch and five-eighths. A few of the arrows are of quartz, jasper, and chalcedony; of these the last mentioned are generally thinner and more skilfully chipped than those made of other stone. Most of the arrows were found apart from graves. With Burial 46, however, there were 45 of these projectiles, chiefly of flint or chert, and with Burial 59 there were three others.

The chipped stone objects of the knife variety, distinguished from the arrowpoints chiefly by their size, are of quartz in the main, and usually are clumsily made, some of them having irregularly chipped facets and prominent ridges. Sometimes the base is concave, as in the case of the arrowpoints, but, unlike the latter, some are nocked for facility in mounting.

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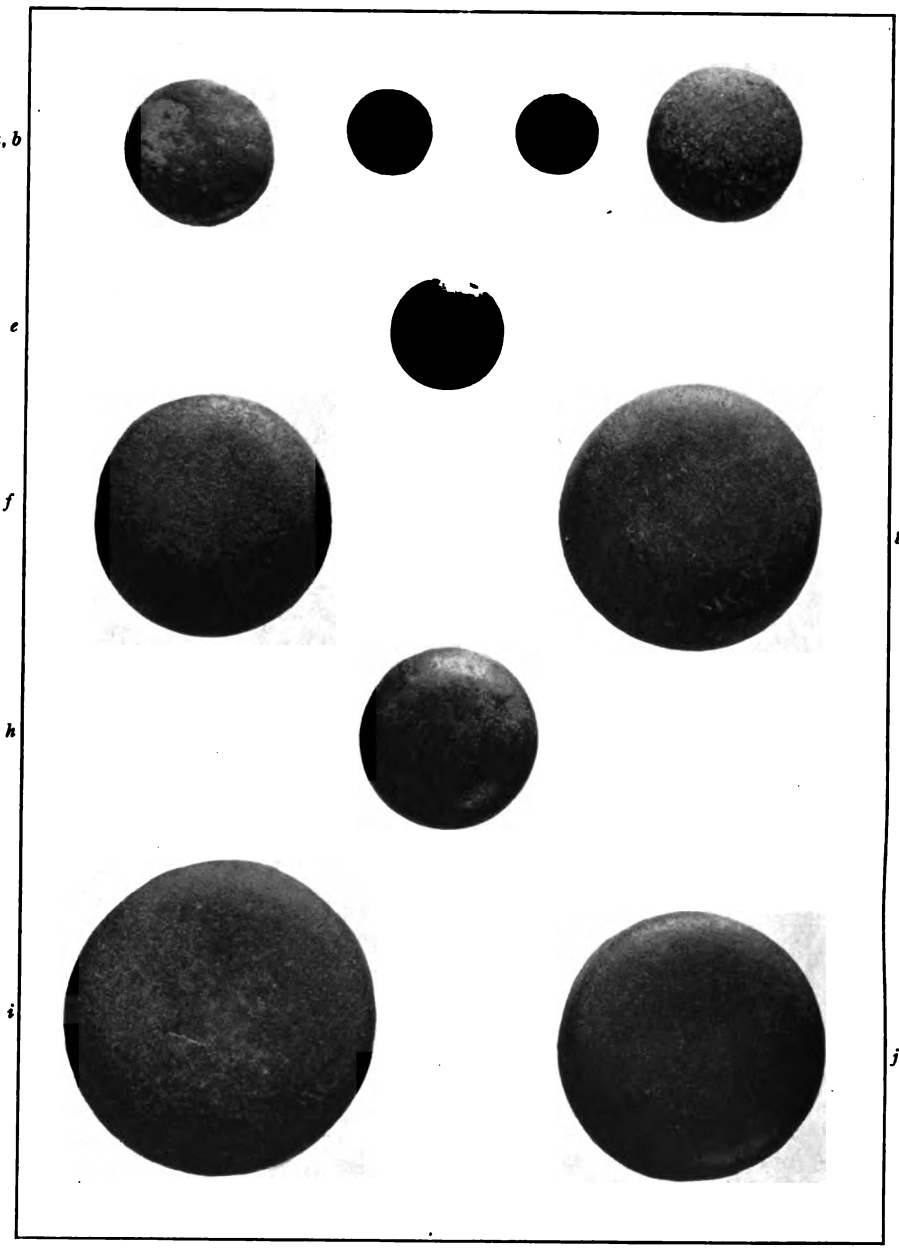

HIGHLY FINISHED DISCOIDAL STONES

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Altogether these implements, if we except the excellent lanceolate blades above mentioned, do not display great skill in stone-chipping on the part of the natives of Nacoochee.

A few gun-flints were unearthed in the upper part of the mound, within four feet of the surface.

Objects of Shell

As already noted in describing Burials 39 and 74, it was the custom of the natives of Nacoochee, as well as of other Southern sites, to remove the columellæ of certain conchs for the purpose of transforming them into drinking-cups, and indeed Jones[1] has mentioned that "in the stone graves of Nacoochee valley more than one *Cassis flammea* was seen. In each instance the interior whorls and columellas had been carefully cut away, so that these large univalves formed capacious and serviceable vessels." Parts of similar cups, as well as columellæ of shells from which they had been fashioned, were found also in the refuse, and a columella was associated with Burial 14. But unfortunately shell objects of all kinds had become greatly disintegrated, evidently on account of the decaying effect of the moist soil of the mound. Numerous beads and other ornaments were of such limy consistency as to be beyond recovery, while others, although preserved, have lost much of their former shape. Exceptions to this condition are found in a Unio (*U. complatus* Dillwyn) and in certain univalves (*Polygyra albolabris* (Say) and *P. thyroides* (Say)), many hundreds of which, especially the former, taken from the refuse, are in excellent condition, the Unios retaining their nacre as freshly as ever. A small Unio has been drilled near the hinge to afford a means of suspension, evidently as a pendant, while two others have been serrated at one end, possibly for use in decorating pottery. Hundreds of these bivalves are considerably abraded at the longer outer edge by use as implements; indeed some are so greatly worn as to be concave, instead of convex as in nature, and as shells of this kind would have made excellent pottery-finishing tools, they may have been employed for such purpose. Others, while also worn at the outer

[1] Antiquities of the Southern Indians, pp. 233, 499, New York, 1873.

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edge, retain their convexity, as would have been necessary if used for finishing the inner walls of earthenware vessels. It is possible also that some of these bivalves may have been used as spoons, although they are rather small for this purpose, and, moreover, the worn edge is squared rather than sharp, which would not be the case if employed for any purpose other than deliberate scraping, such as the walls of pottery receptacles. Moreover, very few of the shells exhibit the effect of wear on the outer surface.

The *Polygyra* shells bear no evidence of use, although many hundreds were found in the refuse, especially in that under the southeastern slope of the mound. Certain sherds of earthenware, however, bear a uniform crescentic decoration of the rim, such as might have been produced by pressing the lip of such a shell in the moist clay, as observed by Mrs Heye while assisting in the work of excavation.

It was for personal adornment that shells were chiefly employed, most of the worked specimens, especially various forms of shell beads, being found in association with the remains of the dead, as mentioned in the description of Burials 1, 2, 3, 5, 7, 13, 22, 33, 53, and 70.

Information respecting the use of shells by the Cherokee in the eighteenth century is afforded by Timberlake,[1] who says, "They that can afford it wear a collar of wampum, which are beads cut out of clam shells." Adair[2] gives further particulars regarding the use of beads and other shell ornaments by the Cherokee, as follows:

"The American *Archi-magus* wears a breast-plate, made of a white conch-shell, with two holes bored in the middle of it, through which he puts the ends of an otter-skin strap and fastens a buck-horn white button to the outside of each. . . .

"The Indian nations are agreed in the custom of thus adorning themselves with beads of various sizes and colours; sometimes wrought in garters, sashes and necklaces, and in strings around their wrists; and so from the crown of their heads sometimes to the cartilege of their nose. And they doat on them so much as to make them their current money in all payments to this day.

[1] Op. cit., p. 39.

[2] Op. cit., pp. 84, 170.

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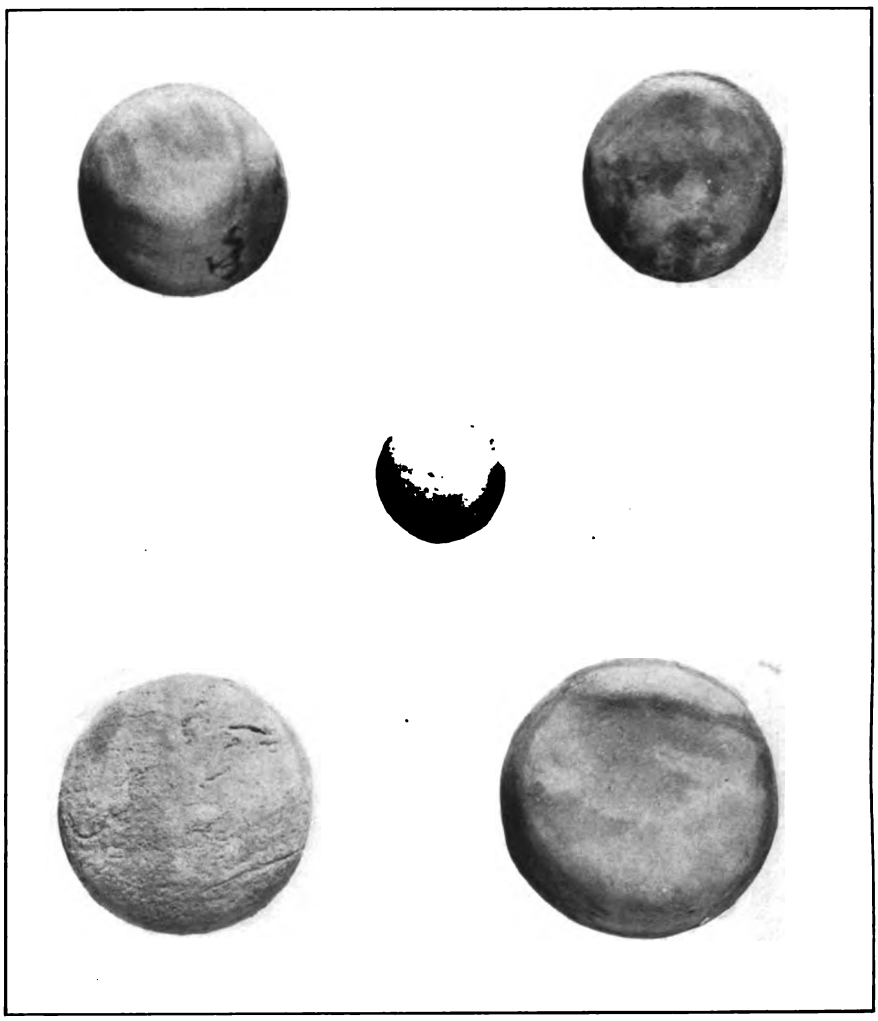

HIGHLY POLISHED DISCOIDS OF QUARTZ AND CALCAREOUS STONE

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"Before we supplied them with our European beads, they had great quantities of wampum; (the Buccinum of the ancients) made out of conch-shell, by rubbing them on hard stones, and so they formed them according to their liking. With these they bought and sold at a stated current rate, without the least variation for circumstances either of time or place; and now they will hear nothing patiently of loss or gain, or allow us to heighten the price of our goods, be our reasons ever so strong, or though the exigencies and changes of time may require it. Formerly, four deer-skins was the price of a large conch-shell bead, about the length and thickness of a man's forefinger; which they fixed to the crown of their head, as an high ornament—so greatly they valued them. Their beads bear a very near resemblance to ivory. . . ."

The shell beads worn by the inhabitants of Nacoochee are of several varieties, governed largely by the species of shells from which they were made. The largest ones were fashioned from the columellæ of conchs, more or less of the natural surface of the shell being preserved. The large beads mentioned in the description of Burial 1 as forming a breastplate are of this kind, the ornament having been fastened in some manner by means of a string of smaller beads of two sizes, probably also made from columellæ, but all are so greatly disintegrated that the original form of most of them is not determinable. A number of these smaller beads, however, are similar to many found with Burial 3 in association with trade beads of blue glass, the whole likewise forming a breast ornament. Most of these latter shell beads are barrel-shaped, varying in size (the largest being half an inch long) as well as in thickness (the largest measuring seven-sixteenths of an

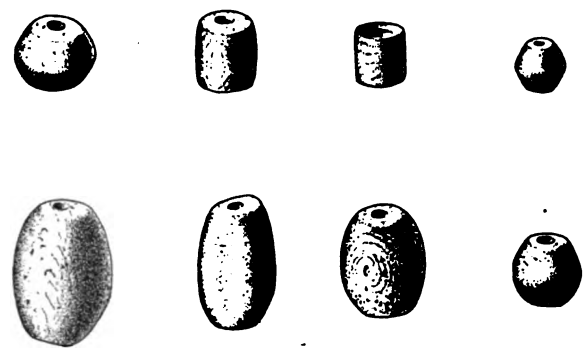
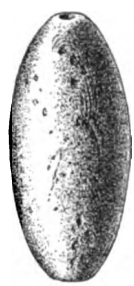


FIG. 56.—Various forms of shell beads.



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inch), while some of the smallest ones are cylindrical, others almost spherical, and only three-sixteenths of an inch in length. The largest beads made from conchs were found with a celt in association with Burial 53, one of which is 2⅛ in. long by an inch in diameter, and all bearing very little finish, as if it were the desire of the maker to preserve as much of the shell as possible. Those found with Burial 5, however, had been more or less symmetrically shaped. Examples of shell beads are shown in fig. 56–57.

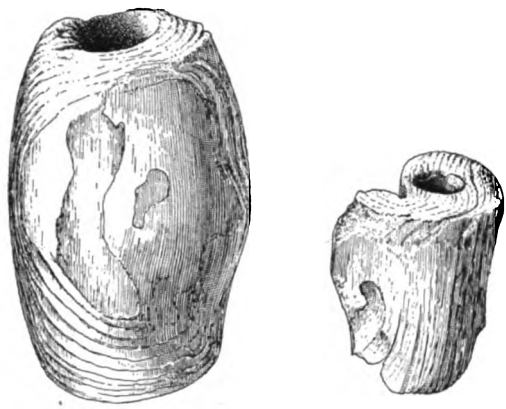

FIG. 57.—Beads made from the columella of the conch.

With Burial 2 were numerous Marginella shells (*M. conoidalis* Kien), found on and under the scapulæ and pelvis, evidently having been fastened to the shirt and leggings by sewing through an aperture made in the wall of the shell by grinding or rubbing rather than by drilling. As in the case of Burials 3 and 4, these were accompanied with objects of European manufacture, including glass beads; indeed most of the shell beads were found in the upper part of the mound, within about four feet of the summit, which may not be significant if we account for the loss of others, deposited with the dead at greater depths, through complete decay.

Some of the shell beads found with skeletons are tiny and well made, a few of them indeed being so diminutive as barely to accommodate the drilling, being little more than a sixteenth of an inch in diameter.

In addition to the beads fashioned from conchs, large pendants or gorgets were made, as mentioned by Adair, but as in the case of most shell objects, these were usually decayed beyond recovery. One of these, perforated at the center, was found with Burial 13, beneath one of the fine chipped blades before described. It was

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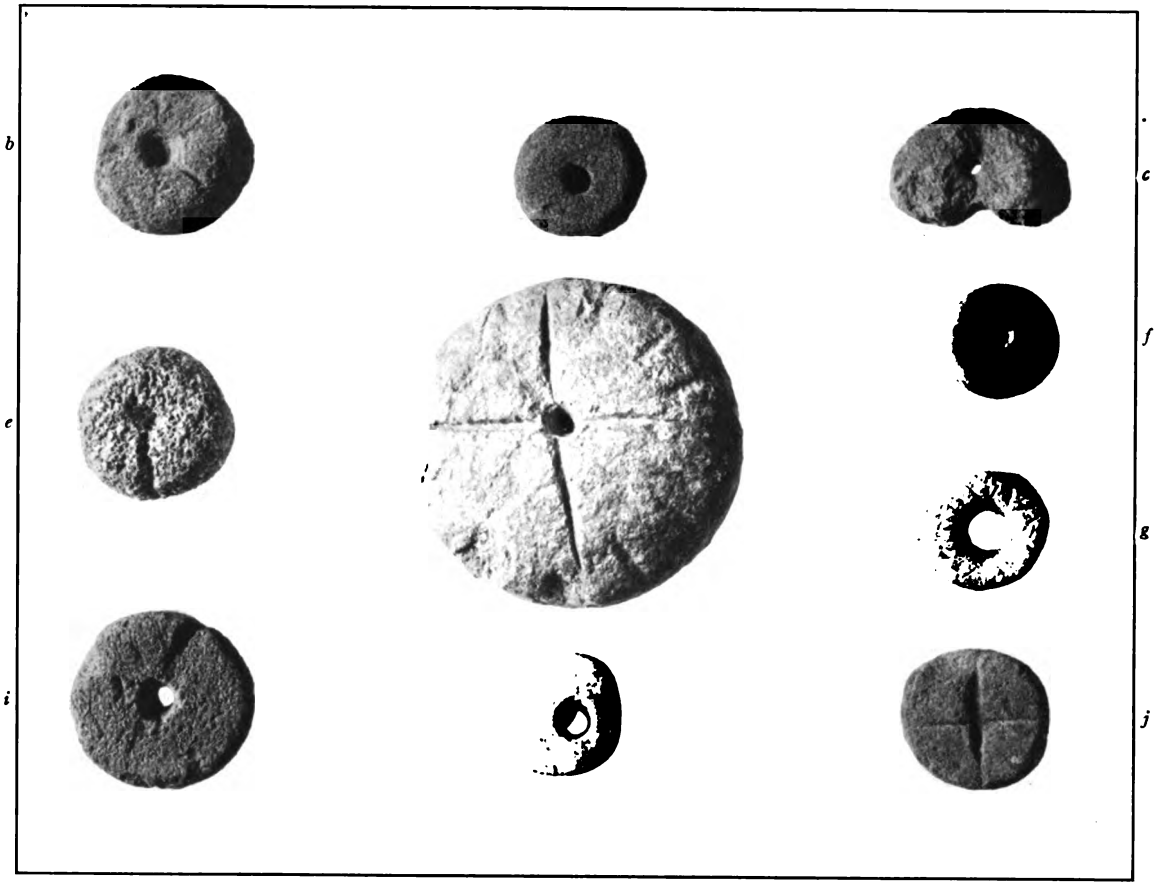

DISCOIDS OF STEATITE AND OF OTHER STONE

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in fragments, but when entire was probably five inches or more in maximum diameter. The object fashioned from conch shown in fig. 58 may have been intended for use as a pendant.

Finally, there were found with skeletons, in every case in connection with the skull, the remains of ear-plugs and hair ornaments evidently made from the conch. Enough of these objects remains to indicate that they were of two types—those with knobbed heads and those with flat heads, identical in form with some that have been found in Tennessee mounds. It will be recalled that Jones (pp. 233–234, pl. VI) de-

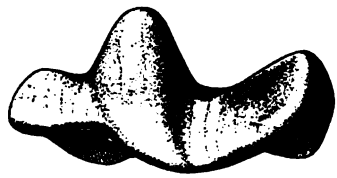

FIG. 58.—Object of shell probably designed for use as a pendant.

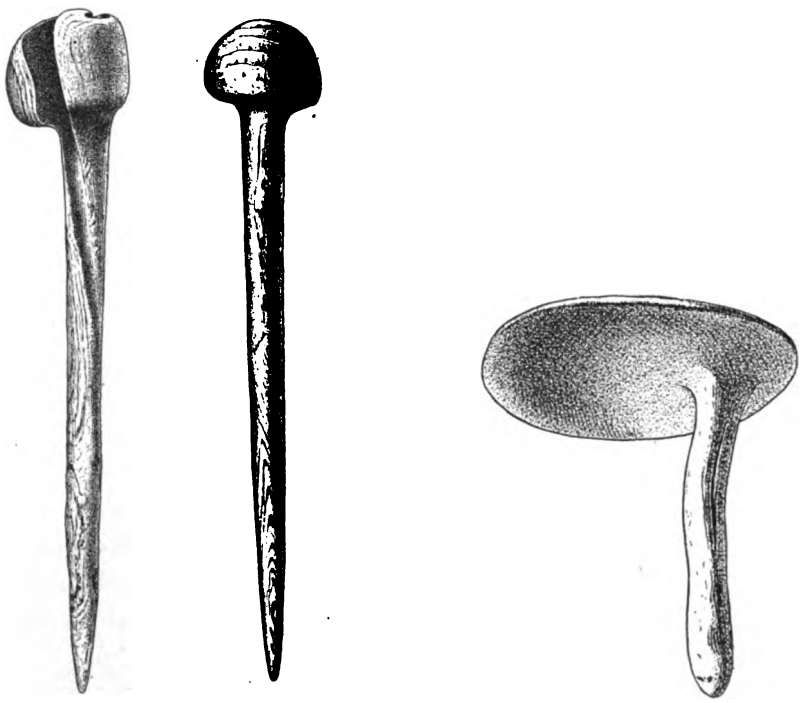

FIG. 59.—Ornaments of shell from the Soquee site.

scribes and illustrates two "shell pins" found in one of the Nacoochee stone graves by Captain Nichols, one of which was of the

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knob-head form. We have already mentioned ear-plugs of pottery, probably designed for temporary use to enlarge the aperture in the freshly-pierced lobes, and Jones refers to and illustrates one of steatite of identical form, found also by Captain Nichols.

The disintegrated fragments of these shell ornaments found by us are practically worthless for illustration, but fortunately the Museum of the American Indian, Heye Foundation, possesses examples of all these forms of ear-plugs and hair ornaments from the Cherokee village-site of Soquee, only a few miles away. These are represented in fig. 59.

We have mentioned the use of ground shell for tempering the clay used in the manufacture of pottery receptacles.

Objects of Bone and Wood

There is a decided paucity of bone objects from Nacoochee, owing chiefly to the fact that implements and ornaments were not made of bone in considerable quantity, if conclusion may be based on the number of such objects found. Mammals and birds were no doubt abundant in the neighboring mountains in early times, and indeed bones in numbers representing the fauna of the region were found during the course of the excavation, including those of the Virginia deer, black bear (both of which were very numerous), gray fox, squirrel, opossum, and wild turkey.[1]

Awls, as usual, are most prominent in the collection of bone objects. For the greater part, these were found with other refuse, having been cast away because of breakage. They are chiefly of deer bone, the articular process forming a convenient handle; but there are a few slender examples as well, all imperfect, made from animal ribs or from the bones of birds. None of them offers anything of particular interest, as all belong to well-known forms that have often been illustrated. A punch-like implement (fig. 60), 5¼ inches in length, is exceptional in the collection.

The most interesting specimen made of bone is the pin shown in fig. 61; it is 3⅞ inches in entire length, the head being 1⅛ inches

[1] The determinations were courteously made by Dr Gerrit S. Miller of the United States National Museum.

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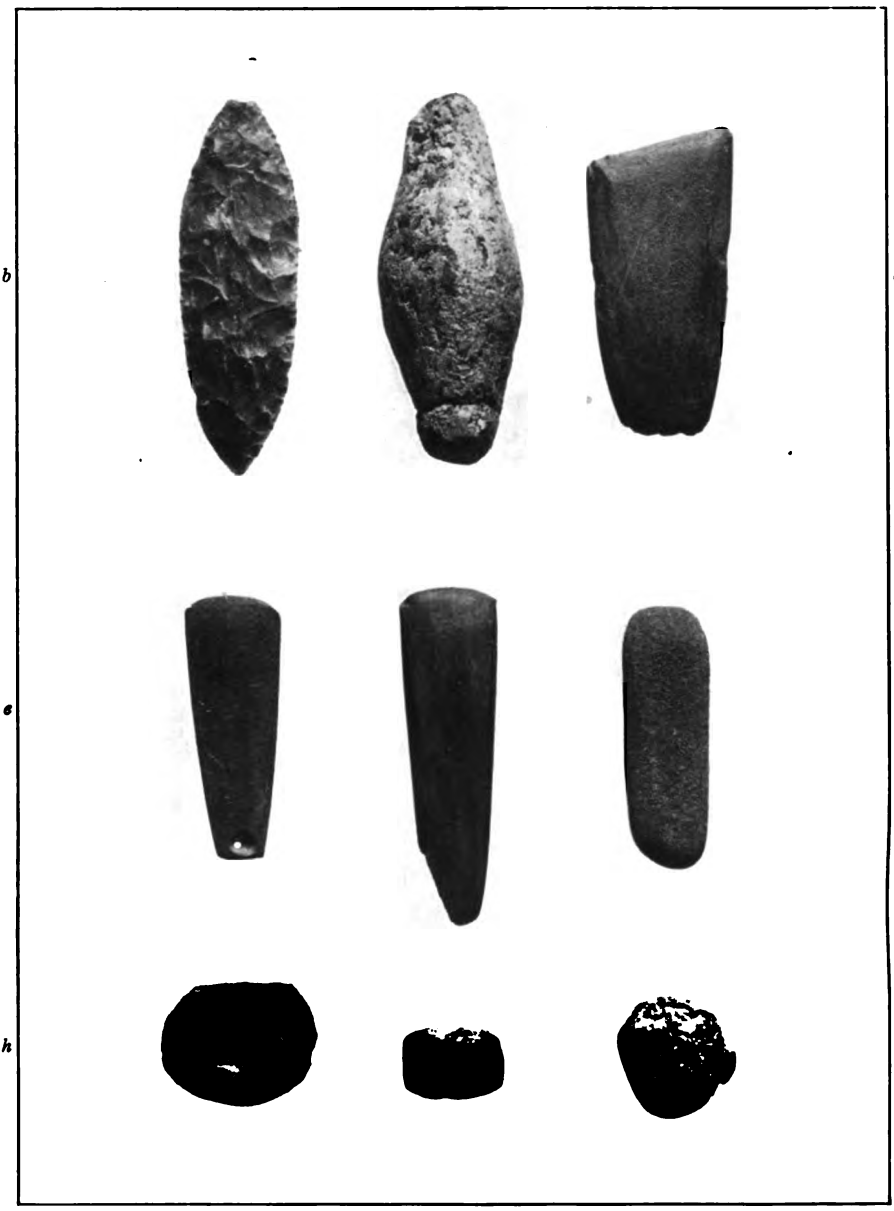

VARIOUS STONE OBJECTS

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in diameter from left to right. This object was found with the skull of Burial 70, exposed by the caving of the bank after a heavy rainfall.

Antler.—With the bones we may class the gouges and punches of antler, of which a considerable number, as well as prongs of

FIG. 69.—Bone punch.

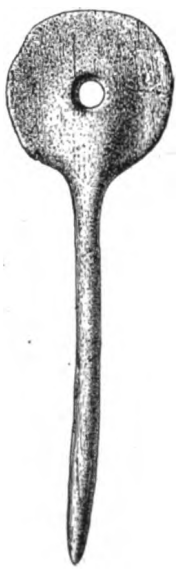

FIG. 61.—Bone pin.

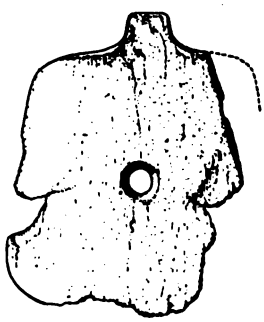

FIG. 62.—Ornament of tortoise-shell.

antlers that had no indication of artificial work, were encountered. The end of the largest prong is beveled to a chisel-like edge; the other examples were used as awls or punches with little if any modification.

Tortoise-shell.—Two imperfect ornaments made from the carapace of tortoises were found (fig. 62). Both are perforated at

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the center, and had a pin-like projection at one end if not at both, but in each specimen it has been broken off.

Bear Tusks.—Mention has been made of the finding of numerous bones of the black bear in the refuse, indicating the abundance of that animal in former times and its use for food by the Nacoochee people. The presence likewise of hundreds of bear tusks suggests their use as implements for scratching and scoring wood, and probably also in pottery making. Indeed, as some of the tusks bear the marks of use both on the bony tissue and at the enameled end, there is little question that such an effectual tool should have been employed in various ways.

Wooden Ear-ornament.—The only preservable artifact of wood found during the work is the small ear-button illustrated in fig. 63. This object, which was found with Burial 53, had evidently formed the core of an ornament that had been thinly plated with copper which has entirely disappeared, leaving not even a stain on the wood to mark its former presence. The outer face is convex, the central part elevated, with an oblong aperture in the middle. The under side is chamfered at the edge and has a regular groove cut from opposite edges to the level of the chamfer. It is not certain that this core is complete.

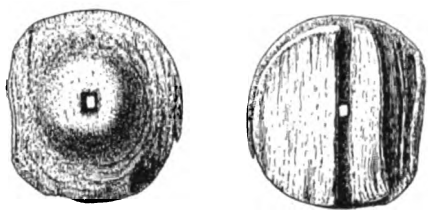

FIG. 63.—Wooden ear-ornament.

OBJECTS OF COPPER

An account of the finding of the copper celt and sheet-copper ornament in the grave of Burial 46, and also of a similar celt and other copper objects in a grave unearthed by Captain Nichols near the western base of the mound, has already been given. It remains for us to mention two arm-bands of copper, each with a thin lining of bark, found on the skeleton of Burial 3 at a depth of 28 inches below the summit.

The first of these bands is 3¼ inches wide at one end and 2¾ inches at the other, and varies in thickness from a sixteenth of an

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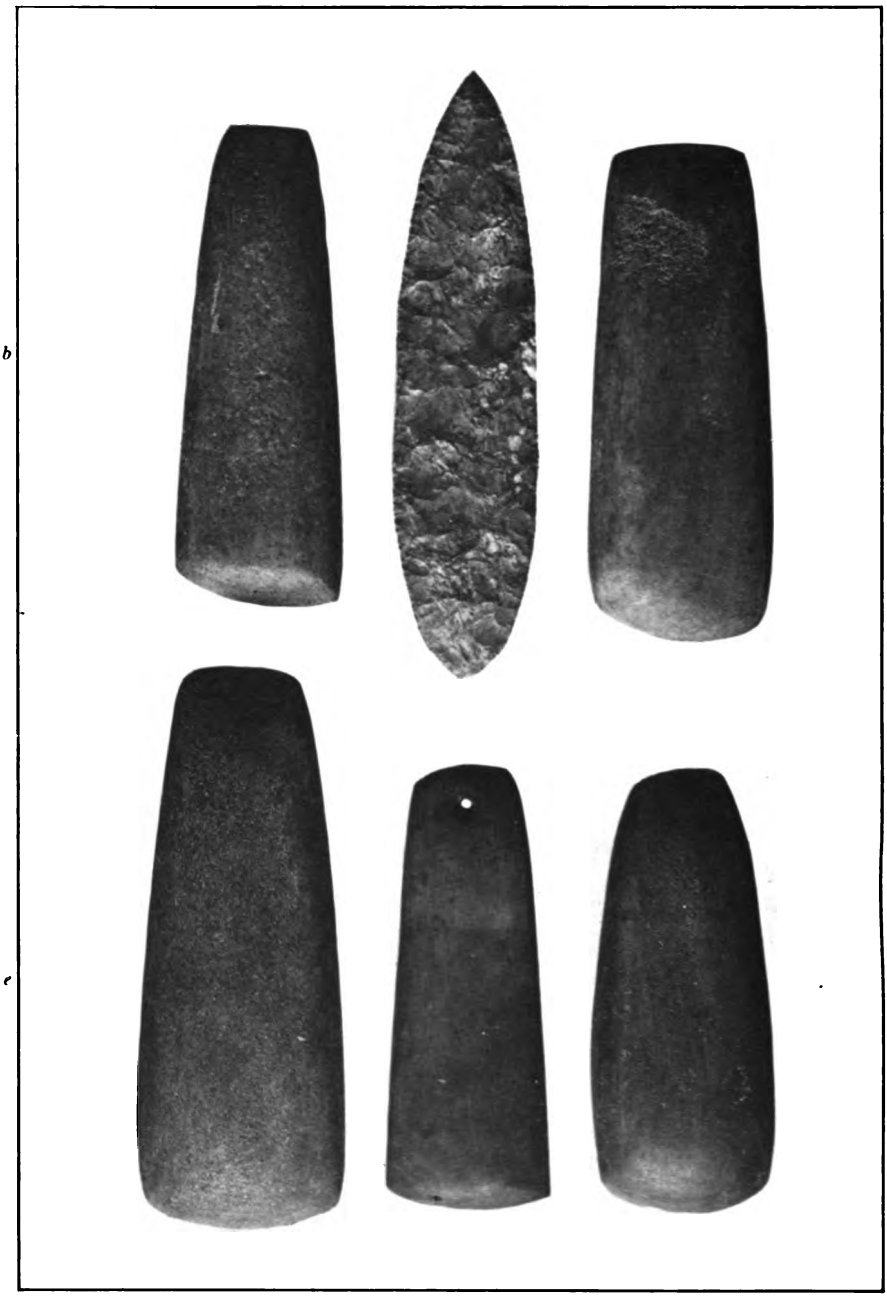

CELTS AND CHIPPED KNIFE

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inch in its heaviest part to that of thick paper where corroded through, for it was broken into pieces when found. The band does not taper gradually from one end to the other, the narrower end having been cut away at one corner to a depth of 1⅛ inches from the termination. In this end two holes, and in the other one hole, have been punched, the roughened edges of the holes on the under side not having been removed.

The other arm-band is 3⅛ inches wide at each end, but is slightly wider at the middle and is of the same general thickness. Three equidistant holes have been punched in one end and two holes in the other, but in the latter a corresponding third hole was commenced and the attempt abandoned.

Particles of bark still adhere to the under side of the arm-bands, the remains of a thin padding or lining for the protection of the skin of the wearer. There is no reason to suppose that these arm-bands are of commercial copper, any more than that the copper celts are of foreign origin.

Miscellaneous Materials

Scattered here and there in the mound or in the graves were fragments of mica, hematite, quartzite and other stones, galena, and such like mineral substances, largely the rejecta of manufacture or materials used for paint. Some of the hematite and galena show surfaces smoothed by rubbing for the purpose of reducing the raw material to paint, and deposits of hematite and ocher in pasty masses but which had once been powder, no doubt, were found in some of the graves, as likewise were a few quartz crystals, so precious to Indian medicine-men generally.

The plaited matting and fragments of woven fabric found with Burial 46 have already been described and illustrated (pl. VII, XVI, and fig. 2).

With Burial 39, as before mentioned, were found seven small drilled pearl beads that evidently had been worn at the neck.

Objects of Foreign Origin

Beads.—No objects derived from the white man were found in the mound at a depth of more than four feet. Articles of foreign

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provenience consist largely of glass beads, mostly spherical or barrel-shaped, blue or greenish blue, a number of them iridescent, a few striated with white. One of the blue beads is cylindrical, a little more than half an inch long, rounded at the ends, and much worn or weathered; another, also cylindrical, is half as long, with straight ends. There are also a couple of small plain white beads; two barrel-shaped ones, also white, each with three lines in red and blue, found with which, in Grave 4, were two smaller ones of the same shape but without the colored stripes; one purplish black in color with a netting of white wavy lines around the body; and one of amber-colored glass. The smallest of the blue-glass beads is less than an eighth of an inch in diameter, while the largest, somewhat barrel-shaped, is more than three-eighths of an inch long.

While most of these trade beads were found with comparatively recent burials, a few were recovered from the mound refuse. In two instances (Burials 3 and 4) trade beads in numbers were found with skeletons in association with native shell beads that had formed a breast ornament and a necklace respectively. It will be remembered that Captain Nichols plowed up in the adjacent field forty-five Venetian beads, "varying in shape and color, some of them being red, others blue, others white (of which variety some have a blue wreath, inlaid, encircling them), others green, with crimson and yellow horizontal stripes upon them, and others black." [1]

Glass and Crockery.—Two fragments of bottle glass, one thin and green, the other thick and blue, were found not far beneath the surface, as likewise were some small pieces of crockery glazed on both surfaces.

Copper Objects.—With Burial 4 were a pair of well-made, circular, convex, copper buttons, 1⅛ inch in diameter, with shanks, and with a small boss in the middle of the face. A fragment of tanned skin was attached to each button at the back, as if to form washers, or they may be parts of a skin garment to which the buttons were fastened, as they were found under the scapulæ and pelvis of the skeleton. In one of the shanks are remains of a

[1] Jones, op. cit., p. 235.

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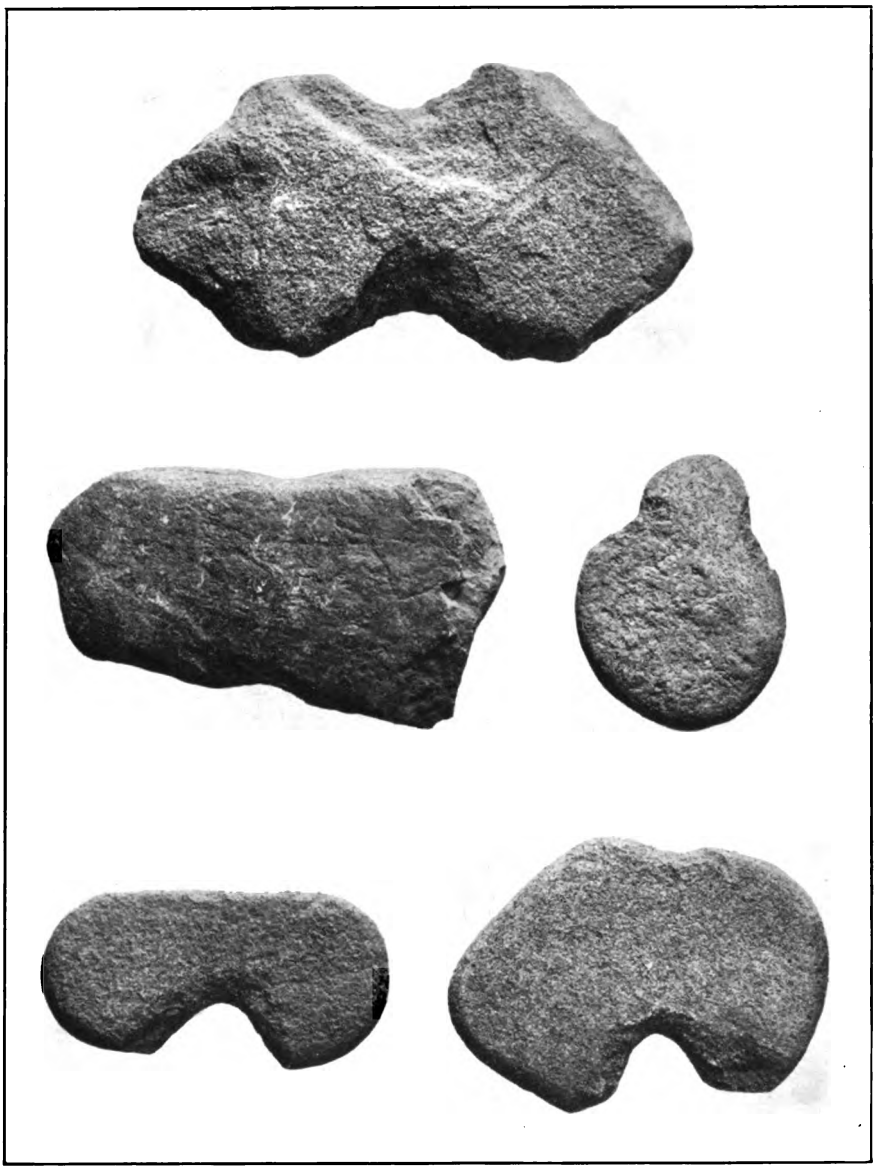

NOTCHED STONES

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fiber cord by which this button was attached, while with the other is a knot of dried skin, probably deerskin, evidently the remnant of a thong used in securing it.

A piece of sheet-copper, 2¾ x ⅝ inches, is ground sharp at one end apparently for use as a chisel.

Another intrusive object of copper and one of iron, found near the surface, are of no special significance, as they give no indication of aboriginal modification.

Lead Objects.—Most important among the objects of lead are thirteen buttons, more or less disintegrated, three of which were in front of the arms, three near the feet, and others under a stone pipe at the base of the pelvis of Burial 4—the skeleton with which the copper buttons were found. The lead buttons, while now of irregular circumference, measure one inch to an inch and an eighth in diameter, and each bears on the under or concave side a central boss or stem which does not seem to have been a looped shank. Possibly this stem at one time was sufficiently long to pass through the garment and the button secured by bending.

Three crudely molded bullets of lead and also half of a bullet-mold of the same material were found in the upper refuse.

Mention has already been made of the finding of small fragments of clay trade pipes near the surface.

No more interesting intrusive object was found than the eight-real Spanish coin, dated 1808, which was taken from slightly under the surface at the northeastern base of the mound. A smooth round hole punched near the top indicates that the coin had been used as a pendant. It was not associated with a burial, hence may be regarded as having been lost during the occupancy of the site, and therefore in a measure as establishing a limit of time for its abandonment.

SUMMARY

The settlement of Nacoochee (Nagu'tsĭ'), with its artificial mound on which was the town-house, was inhabited by the Cherokee Indians from prehistoric times until about the year 1819, and is identified with the Guaxule of the chroniclers of the De Soto expedition in 1540. As prescribed by Cherokee custom, the village

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was situated near a stream—the Chattahoochee river. Built of soil from the surrounding field, the mound at the time its excavation was commenced rose to an elevation of 17 feet, 3 inches; its summit, which had been dug away to a depth of two feet years ago, was 67 feet 4 inches in minimum and 82 feet 9 inches in maximum diameter, with a circumference of 231 feet, while the basal circumference was about 410 feet. The mound was primarily domiciliary, but numerous interments were made therein.

Desultory excavations were made near the western base of the mound in 1870 by Captain Nichols, the owner of the property at that time, resulting in the finding of three stone graves, with numerous accompanying artifacts, including a copper celt and other copper objects, as well as specimens of matting, shell, and steatite and other stone, including the only grooved stone axe known from Nacoochee. In the nearby field other artifacts were plowed up, including a remarkable earthenware effigy pipe, which, with most of the other specimens found by Nichols, are now in the Museum of the American Indian, Heye Foundation.

Various stone-box graves were found in the mound by the expedition of 1915, all in its lower levels; but there were also stone deposits, as if placed to mark the presence of burials, throughout the tumulus. By far the greater number of the interments, however, had been placed in earthen graves, and only twenty-seven of a total of seventy-five burials uncovered were accompanied with artifacts of any particular importance. Most of the dead were buried with their heads directed eastwardly. The skeletons were in a very poor state of preservation, none of them in condition for measurement. The remains of children were especially scanty, owing doubtless to complete decay.

The existence of fire-pits in various parts of the mound, on what had been its surface at the time of occupancy, as well as the stratigraphy of the mound deposits exposed by the trenches, which reached to a depth of more than 19 feet below the surface, showed beyond question that the mound had been built by gradual accretion and occupied during this process, which doubtless covered a long period of time. The finding of objects of European proven-

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ience, especially glass beads, metal buttons, etc., in association with aboriginal artifacts deposited with the dead, all within four feet of the surface, indicates that the mound had been occupied and used for mortuary purposes after the coming of white people.

Although two feet of earth had been taken from the summit many years ago, this removal did not disturb an immense fire-pit, or series of fire-pits one above another, found immediately beneath the summit, near the center. The charcoal remains of poles and canes nearby suggest that this pit may have contained the sacred fire of the town-house, referred to in Cherokee tradition.

The pottery vessels were chiefly cooking-pots and water-jars, some very large, ornamented on the outer surface with stamped rectangular or curvilinear patterns, or incised over the neck and sometimes inside the rim. Ornamental rims, applied after the body was thus decorated, vary greatly in style, dentate and beaded borders predominating. The walls of the vessels are generally comparatively thin, and shell, sand, and mica were used for tempering the clay. The color of the earthenware is the natural hue of the clay, paint not being used as a decorative motive. A single intrusive effigy vessel, found in a stone-box grave near the bottom of the mound, is painted brown and white—the only example of painted ware found. Most of the earthenware was found in the form of sherds in the refuse on the former slopes of the mound, only one entire jar being in association with a burial. A few sherds of small vessels that had been covered with a red slip were found here and there, at no particular level, and some of the jars were of the natural reddish color of the burned clay. Some of the vessels had been provided with handles in the form of loops, knobs, or ridges. A few of the knob handles consist of effigy heads.

Pipes were abundant, although mostly broken, and are of both earthenware and stone, especially steatite. A pipe of catlinite was found with a burial not far beneath the summit. Some of the earthenware pipes bearing bird effigies as decorative motives represent the height of Nacoochee art. The finest of these, as well as the best example of a steatite pipe, was found in the early seventies and is now in the Museum of the American Indian, Heye Foundation.

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Most numerous among the stone objects are the discoids, of varying forms and sizes, and made of various kinds of stone. They range in type from the very rude, to excellent symmetrical specimens with straight or beveled sides and rounded corners, made chiefly of dioritic and granitic stone, quartz, and marble. A few fine lanceolate chipped blades of chert, a number of large, well-finished celts of slate and a granitic rock, some of them still showing the marks of hafting, and a comparatively few objects of the every-day kind, complete the product of the more noteworthy stone implements from Nacoochee, which cannot be regarded as in any way rich in material of this kind. With one burial forty-five arrowpoints were found, some of them exhibiting good workmanship. Stone ornaments were almost entirely absent.

Shell no doubt had been used rather extensively at Nacoochee for ornaments, but the condition in which shell objects were found was such that in most cases they were far beyond preservation. Hair- and ear-ornaments were the most common. Drinking-cups made of conchs from which the columellæ had been removed, were probably in frequent use, as fragments were found from top to bottom of the mound. Musselshells were used as scrapers (probably in finishing pottery), and snail-shells were sometimes employed in ornamenting the rims of vessels. Beads, made chiefly from the conch, and with considerable range in size, were found with various skeletons, sometimes in combination with glass beads. There are also beads made from olivella and other small shells.

Objects of bone and wood are almost insignificant, the only exception being a few bone ornaments (probably hair-pins) and implements, and the wooden core of an ear-ornament that had probably been covered with sheet-copper and thereby preserved.

Most important among the copper objects, and the most interesting specimen in many respects found in the mound, is a celt, recovered from a grave near the bottom, associated with a small piece of fabric and a fragment of matting diagonally plaited. Part of the wooden handle of the celt is still in place, showing the method of hafting. In one of the uppermost burials were a pair of bark-lined arm-bands of sheet-copper, without ornamentation.

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Nacoochee may be regarded as a typical Cherokee earthwork. While not rich in artifacts, the products of material culture are such as might have been expected to be revealed by the excavation of a Cherokee site occupied from prehistoric times through a considerable part of the historic period. The culture of its inhabitants had not been greatly modified by contact with civilization, for only the upper part of the mound revealed objects of European provenience. It is not likely that more than a few feet of the height of the mound were added during later historic times. Judging from Spanish descriptions of the sixteenth century the form of the mound became greatly changed after the advent of Europeans.

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CONTRIBUTIONS

FROM THE

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VOLUME V

NEW YORK
1917–1919

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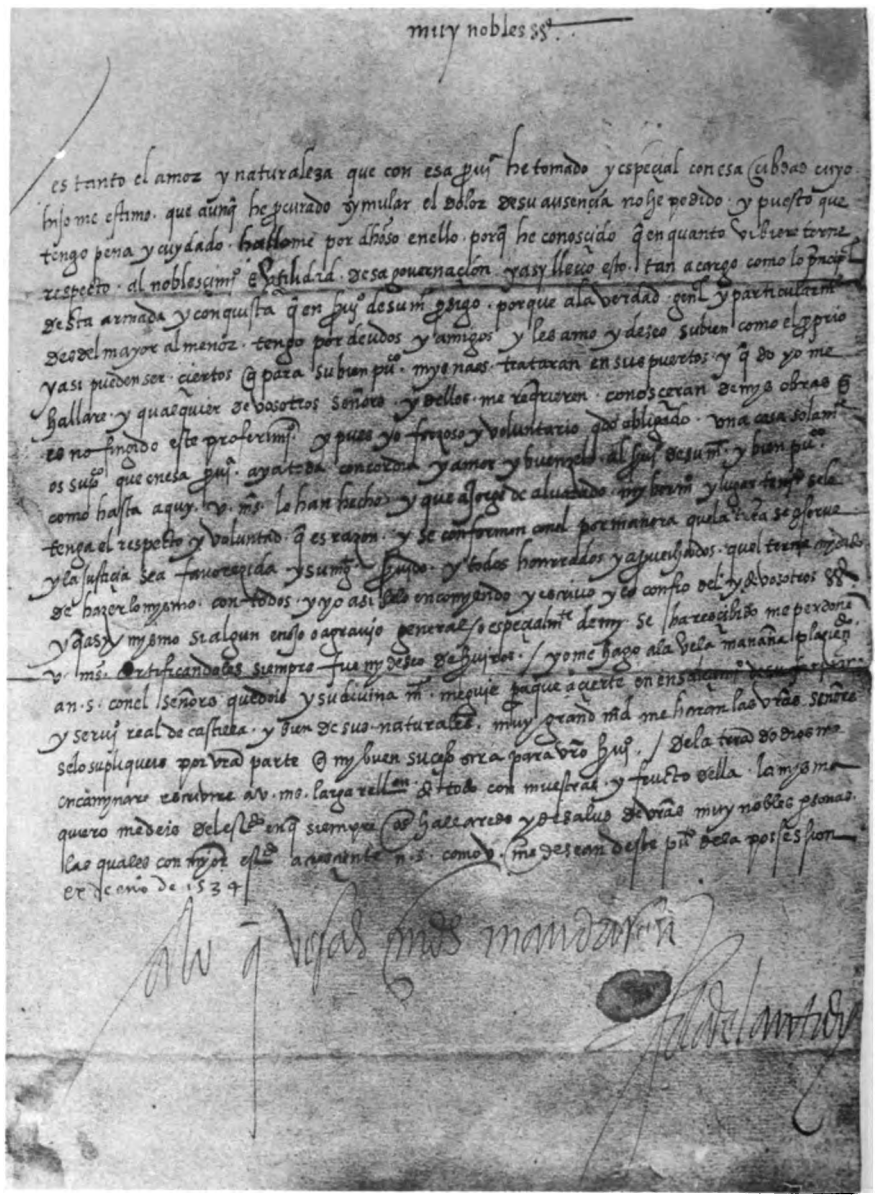

LETTER OF PEDRO DE ALVARADO IN THE MUNICIPAL ARCHIVES OF GUATEMALA

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A LETTER OF PEDRO DE ALVARADO RELATING TO HIS EXPEDITION TO ECUADOR

BY

MARSHALL H. SAVILLE

IN a paper entitled "Collections of Historical Documents in Guatemala," published in the Report of the Smithsonian Institution for 1876, Dr C. H. Berendt called attention to the wealth of historical documents existing in various public collections in the City of Guatemala. At that time Berendt noted five places where manuscript documents were kept. At the present time it seems apparent that the greater number of important manuscripts, so far as they have been preserved in the city, are deposited in the municipal archives in the city hall. During the winter of 1916–17 the writer had an opportunity of making several visits to the archives, and was accorded the privilege by the Alcalde of making photographic copies of some of the documents as well as several chapters of the unpublished manuscript of the second and most important part of the work of Fuentes y Guzman. He hopes to continue this copying during the winter of 1917–18.

The letter of the conquistador Pedro de Alvarado, which we publish in facsimile (pl. 1), is of interest to the student of the conquest of Peru (using that term in its broadest sense), as it relates to the abortive attempt of the adelantado to take part in the conquest of the so-called "empire" of the Incas, when he endeavored to outstrip Pizarro, Almagro, and Benalcazar in the conquest of the territory held by the Quichuas in the interior of Ecuador as far north as the city of Quito. It will be recalled that in 1534, Alvarado, who had been a companion and coworker of Cortes in the conquest of Mexico, and later the conqueror of Guatemala, became ambitious to share in the successes of the Spaniards in the South American field. Despite the opposition of the officials of the Royal Council

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of New Spain, and even of the King, he set out from Guatemala at the beginning of the year with 500 men, together with 2000 Indian auxiliaries, to embark in Puerto de la Posesión in Nicaragua, in ships which he had built. Landing in Bahia de Caraques, on the coast of Manabi, in order to march to Quito, Alvarado remained in Manabi a number of months,[1] where he secured other Indians from the province. After a terrible march in which he lost a great number of his horses and followers, he reached the interior valley of the Andes in the vicinity of Riobamba. In the meantime Almagro, hearing of the presence of Alvarado on the coast, had set out for Ecuador and awaited the coming of Alvarado in Riobamba. With diminished forces Alvarado was in no condition to continue his journey of conquest, and negotiations were entered into with Almagro for the sale of his fleet, forces, stores, and munitions, for one hundred thousand pesos of gold. This sum did not cover his expenses, and Alvarado wrote to the King that he had no choice but to take it, although it was greatly to his own loss, and, by defeating his expedition, to the loss of the crown. Almagro however states that the sum paid was three times as much as the outfit was worth—"a sacrifice made to preserve peace, never dear at any price." After meeting Pizarro at Pachacamac, Alvarado returned to Guatemala.

In recent years several Alvarado letters concerning this unfortunate enterprise have been published. In the *Revista Peruana*, tomo IV, 1880, published in Lima under the editorship of Carlos Paz Soldan, are several letters written by Alvarado concerning this expedition. The earliest, dated January 18, 1534, was despatched from Puerto de la Posesión, later called Realejo, now the port of Corinto, Nicaragua. The last letter is from Guatemala, dated November 20, 1535, written after the return of the expedition from Peru. The letter in the municipal archives of Guatemala, of which we now publish the facsimile, was written two days later than the one published in the *Revista Peruana*, for the date appears to be Pu^{to} de la Possession, 20th of January, 1534.

Following is a list of the letters published in the *Revista Peruana:*

[1] Sancho says three months, while other writers say that he was on the coast five months before beginning the march into the interior.

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Carta del Adelantado Pedro de Alvarado escrita al Rey desde el puerto de la Posesion [Nicaragua] con fecha 18 de enero de 1534 dándole cuenta de su partida desde aquel puerto con el Armada compuesta de 12 velas de 300 toneladas hasta 40, proveidas con todo lo necessario y 450 españoles, de caballo, ballestras, escopeteros, etc. y 140 de mar, y 200 negros eclavos, y que su derotta seria desde los 13 hasta 20 grados de la otra parte de la línea, para descubrir todos los secretos de aquella mar y tierra firme. (Pp. 191–194.)

Carta del Adelantado Pedro de Alvarado escrita al Gobernador de tierra firme Francisco de Barrionuevo con fecha 10 de Marzo de 1534, desde Puerto Viejo [Ecuador], con la noticia del suceso de su navegacion desde 23 de Enero que salió del puerto de la Posesion, con la armada compuesta de 12 velas hasta aquella fecha. (Pp. 194–196.)

Venta que hizo el Adelantado Pedro de Alvarado al Mariscal Don Diego de Almagor de su armada compuesta de un Galeon y cinco navíos con que navegaba en la mar del Sur: hecha en la ciudad de Santiago de Quito, á 26 de Agosto de 1534. (Pp. 196–198.)

Carta del Adelantado Pedro de Alvarado escrita al Rey desde la ciudad de Santiago de Guatemala con fecha de 12 de Mayo de 1535 en que se expresa muy circunstanciadamente asi susodicho en la navegacion que hizo con su armada desde que partió de la provincia de Leon de Nicaragua, á descubrir por la mar del Sur, hasta la arribada que hizo á la tierra del Peru (en cuya costa surjió en una playa llamada Caraques), obligado de las grandes corrientes y vientos contrarios que le impidieran seguir su viaje; como de lo ocurrido con el Mariscal Almagro á quién le vendió dicha armada; concluye con un discurso muy precioso, sobre la forma que se podia tener, y hallaba para descubrir las muchas islas y costas de tierra firme que se persuadia habia en aquella mar. (Pp. 327–337.)

These hitherto unpublished letters of Alvarado are said by the editor to have been copied for J. E. [E. G.] Squier, from the Archives of the Indies. It will be noted that in the second letter the date of sailing from Puerto de la Posesión is given as January 23d. In our Guatemala letter, which appears to bear the date January 20th, it is stated that Alvarado will set sail on the morrow.

Several years ago, while conducting research in the Archives of the Indies in Sevilla, we found an important notice of a narrative relating to this expedition; it is in a bundle containing several reports concerning early voyages to the Ecuadorian coast. In the catalog entitled "Papeles Pertenecientes al Real Patronato," inventario tomo 1, this account is numbered 57 on page 106, and is described as follows:

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Relacion del viage que hizo por el Peru el adelantado Don Pedro de Alvarado salio esta del Puerto de la posesion en Nicaragua con 11 navios y 500 hombres siendo los 260 de caballo Caminó por la via de los Caraques tierra muy rica pues habia en ella oro y esmeraldas sus indios sin embargo de andar desnudos traian el oro colgado de las orejas y narices y se trata muy por menor de la desnudez de estos y demas torpes costumbres quando ya pacificarlo el cuzco llego nueba al Gobernador Pizarro manifestandole como el adelantado Alvarado hablia llegado alli desde Guatemala y desembarcado en puerto viejo cuya desembarcado determinó Pizarro y Diego de Almagro permanescio en el mismo estado impidiendo á Alvarado y vigente pasar adelante 1532 [1534]. In Estante 1, Caja 1, Legajo 1/28.

This report appears to be unpublished.

Another Alvarado letter, copied from the Archives of the Indies, has been published by José Toribio Medina in his *Colección de Documentos Inéditos para la Historia de Chile*, tomo IV, pp. 193–197, Santiago de Chile, 1889. The title is:

Carta del adelantado don Pedro de Alvarado a S.M. dándole cuenta de lo que sucedío cuando saliendo de Guatemala tuvo que arribar á la gobernacion de don Francisco Pizarro. Puerto de San Miguel (Piura), the 15th of January, 1534.

This letter is referred to by Prescott as being in manuscript.

A transcript of the letter which we publish has been included in the text of the *Historia de la America Central* by José Milla. From a footnote it seems that this author copied it from a collection of documents in the municipal archives of Guatemala, brought together by the secretary of the municipality, Don Rafael Arévalo, and printed by Don Luciano Luna in Guatemala in 1857. This work is now so rare that I was unable to procure a copy in Guatemala, and I have been equally unable to consult a copy in this country. In the work of Milla there are several errors in transcription, but these are corrected in our transcription made directly from the photographic copy of the original. In this despatch Alvarado asks that the authorities will respect the authority of his brother Jorge de Alvarado, who remained in Guatemala as his representative, and promises to send from the land which he was to visit, a long written account of all that happened to him, together with "specimens and products" from it. The letter follows.

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CARTA DEL ADELANTADO DON PEDRO DE ALVARADO AL CABILDO DE GUATEMALA DESDE EL PUERTO DE LA POSESION CON FECHA 20 DE ENERO DEL AÑO 1534.

Muy Nobles Señores.

Es tanto el amor y naturaleza que con esa provincia he tomado y especial con esa ciudad cuyo hijo me estimo que aunque he procurado simular el dolor de su ausencia no he podido; y puesto que tengo pena y cuidado hállome por dichoso en ello, porque he conocido que en cuanto viviere terné respeto al noblecimiento e calidad de esa governacion; y asi llevo esto tan á cargo como lo principal de esta armada y conquista que en servicio á Su Magestad prosigo; porque á la verdad general y particularmente desde el mayor al menor tengo por deudos y amigos y les amo y deseo su bien como el propio; y asi pueden ser ciertos que para su bien público mis naos [naves] tratarán en sus puertos y que do [donde] yo me hallare y cualquier de vosotros, señores, y de ellos me requieren, conocerán de mis obras que es no fingido este proferimiento, y pues yo forzoso y voluntario quedo obligado. Una cosa solamente os suplico que en esa provincia haya toda concordia y amor y buen zelo al servicio de Su Magestad y bien público como hasta aqui Vuestras Mercedes lo han hecho; y que á Jorge de Alvarado mi hermano y lugarteniente se le tenga el respeto y voluntad que es razon y se conformen con él, por manera que la tierra se conserve, y la justicia sea favorecida y Su Magestad servido y todos honrados y aprovechados, que él terná cuidado de hacer lo mismo con todos; y yo así se lo encomiendo y escribo, y lo confio de el y de vosotros, Señores. Y que asi mismo, si algun enojo ó agravio general ó especialmente de mí se ha recibido mé perdonen Vuestras Mercedes certificándoles siempre fué mi deseo de serviros. Yo me hago á la vela mañana placiendo á Nro. Señor. Con él señores, quedeis, y su divina Magestad me guíe, para que acierte en ensalzamiento de la fé cristiana y servicio Real de Castilla y bien de sus naturales. Muy grande Merced me harian las vuestras Señores se lo supliqueis por vuestra parte que mi buen suceso será para vuestro servicio. De la tierra do [donde] Dios me encamináre escribiré á Vuestras

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Mercedes larga relacion de todo con muestras y fructo de ella; la misma quiero que me deis del estado en que siempre os halláredes y de salud de vuestras muy nobles personas; las cuales con mayor estado acreciente Nro. Señor como Vuestras Mercedes lo desean. De este puerto de la Possession 20 de Enero de 1534.

A lo que Vuestras Mercedes mandaran,

El Adelantado.

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THE DIEGUEÑO CEREMONY OF THE DEATH IMAGES

BY

EDWARD H. DAVIS

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THE DIEGUENO CEREMONY OF THE DEATH IMAGES[1]

BY

EDWARD H. DAVIS

INTRODUCTION

CALIFORNIA, next to the largest state in the Union, with the greatest varieties of climate, scenery, and products, supported the largest permanent aboriginal population of any equal area in the United States. Not the least interesting feature of this Indian occupancy is the fact that of fifty-eight distinct stock languages spoken by the Indians north of Mexico, twenty-one, or more than a third, according to Major Powell, were spoken in California, and most of these were confined to the northern portion of the state. In the extreme southern part there were two distinct stocks, Shoshonean and Yuman, with numerous dialects of each. In San Diego county the representatives of these two stock languages are known by the Spanish terms Luiseño and

[1] This article is published as a record of personal observation of an interesting ceremony performed by the Diegueño Indians of southern California. The rite has long been known and has been described from information derived from a Diegueño by Miss Constance Goddard Dubois in the *American Anthropologist* (n. s., VII, pp. 625–628, 1905), but the two accounts vary somewhat as to details and what one lacks the other in a measure supplies. An account of the same ceremony as performed by the Luiseños, and derived likewise from a native informant, is presented also by Miss Dubois in the *University of California Publications in American Archaeology and Ethnology* (VIII, no. 3, pp. 100–104, 1908). While this author admits that with what tribe originated the manufacture of images made to represent the dead person must be a matter of speculation, she attributes the origin of the Chung-itch-nish religion to the Luiseños, but which, "impressing itself upon the Diegueños, mingled its ideas with their myths, merging the characters of Chung-itch-nish and Oui-ot, entirely distinct in Luiseño conception, with the Diegueño Tu-chai-pa." So far as known, Mr Davis's description of the Image Ceremony of the Diegueños is the first account based on personal observation, while the images herein illustrated, now in the Museum of the American Indian, Heye Foundation, are the only ones that have ever been procured and photographed.—*Editor.*

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Diegueño, that is, the languages or Indians affiliated in former times with San Luis Rey and San Diego missions respectively. Included in the former are the Indian villages and reservations of La Joya, Rincon, Pauma, Pala, Pechango, Banning, Cahuilla, San Ysidro, San Ygnacio, Soboba, and a number of other villages in the desert. Among the Diegueños are the Mesa Grande, Santa Ysabel, San Pascual, Iñaja, Capitan Grande, Los Conejos, Sequan, Campo, Manzanita, Weeapipé, and Laguna rancherias or villages.

Among these Indians one of the most interesting as well as the least known ceremonies is called variously Image Ceremony, Burning the Images, Burning the Clothes; in Spanish, Los Monos, Los Monitos; in Cupaño (Hot Springs), Nóngawut; in Luiseño, Tochinish, and in Diegueño, Wúkarúk.

This ceremony was performed generally by the Indians throughout San Diego and Riverside counties, and possibly much farther north, at the time the missions were established. When the natives embraced the Roman Catholic faith, the custom was discontinued by many of the tribes, but a few natives still cling tenaciously to the ancient rite. In general it may be said that the tribes living remote from the missions and therefore least affected by their influence are the ones that still practice the Image Ceremony.

The Indians who still make and burn images are those living at Palm Springs, Banning, Pala, Campo, Weeapipé, and Yuma. Among these tribes the ceremony differs only in details. The material forming the foundation or framework of the image is the same in all cases; head, hair, and features are made to resemble those of the dead person; it is clothed throughout in new garments, and finally cremated. All this is attended with much ceremony, chanting, dancing, and mourning, the mourning often covering a period of several days and nights.

Image ceremonies, being expensive, costing from five hundred to a thousand dollars, are not performed every year. Usually when the number of deaths in a family or clan, such for instance as the Cueros (Hides) or Las Chusas (The Owls), extending over a period of five or seven years, number from ten to fifteen, including adults and children of both sexes, they give an Image Ceremony

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at which Indians from near and afar attend, attired in their holiday clothes. The family and other relatives of the dead extend full and generous hospitality to all the invited tribes, but abstain from partaking of any of the food themselves. The family or clan also bears all the expense of gathering the materials, making and clothing the images, and conducting the ceremony. They pay the leader of the chanting and dancing, the men who dance with the images, and the fire-tender, and they furnish the coins which, at one period of the ceremony, are strewn by handfuls among the assemblage of Indians.

Following is a description of the Wúkarúk, or Image Ceremony, witnessed by the writer at Weeapipé. This rancheria is situated in a narrow, sandy valley on the southern slope of Laguna mountain, twenty-five miles northeast of Campo, which is the trading place of these Indians. The valley is dominated by a great mass of castle-like rocks, about three hundred feet in height, at the head of the valley, from which the rancheria derives its name, Weeapipé meaning "Leaning Rock."

Preparations for the Ceremony

Before describing the ceremony itself, we will consider the preparations necessary to a successful fiesta, with particular reference to the ceremony which was performed at Weeapipé from August 24 to 30, 1908.

Preparations were commenced in 1906, two years before. The materials entering into the construction of the images, as well as foods, had to be gathered when mature, and much of this was done the year preceding the ceremony. Piñon nuts, acorns, and corn were harvested the preceding autumn, and fiber from the maguey, or mescal, and red milkweed were also gathered. Dried yucca stalks and materials used in building the *kurukñawah*, or house of the images, were gathered months before the time they were to be used.

Only old men are entrusted with the preparations for the Image Ceremony, and all the materials are gathered and prepared in accordance with a prescribed ritual handed down by tradition from

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their culture hero, Chaup,[1] from time immemorial. These old men go out, or used to go out, into the hills emptyhanded—without axe, knife, matches, or any of the things ordinarily considered indispensable. They carried wild tobacco and a gourd rattle for ceremonial purposes in gathering their materials, and probably stone knives. Only the implements used in ancient times, as prescribed by tradition, were permissible. There is no evidence that stone axes were used in this section of the country.

From the dried stalks of the guatamote bush, which grows in creek bottoms, fire was made by friction, or, if on the desert, they used the stems of the fan-leaf palm.[2] With this fire they lighted their tobacco and felled the posts and poles by burning them through at the base. This was accomplished by placing dry logs against the trees and letting the fire burn through the stump. Fire was employed also for burning the logs the desired length.

As each thing was gathered, it was chanted over and a ceremonial smoke indulged in. Months of time were consumed in assembling all the materials, and as these were gathered they were secreted among the rocks and in caves in the hills to await the opening of the ceremony. On the desert the fiber was extracted from the thick, spiked leaves of the maguey, or mescal, and the brown, sticky juice that exuded from the large bulb at the base of the plant, when it was roasted for food, formed the body of the paints for decorating the faces of the images and also the faces of the mourning Indians, especially the women. This molasses-like sap was preserved in small ollas for future use.

In the autumn sacks of piñon nuts were laboriously gathered by the women in the desert mountains and in the higher ranges, and acorns were harvested, cured, and stored away in great ollas, sacks, or granary baskets. Corn and pink beans (frijoles) were hulled, threshed, and likewise stored away. The hair, cut off as a sign of mourning, was saved, and the gum which forms as an excrescence on the chamisal bush was gathered and preserved.

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[1] See Dubois, The Story of Chaup: A Myth of the Diegueños, *Journal of American Folk-lore*, vol. XVII, pp. 217–242, Oct.-Dec., 1904.

[2] According to Sparkman (*Univ. Cal. Pub. Amer. Archaeol. and Ethnol.*, vol. 8, no. 4, p. 209, Berkeley, 1908) the Luiseños used the wood of *Baccharis Douglasii* for fire-making.—*Editor.*

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The principal material, *Juncus textilis*, entering into the making of the images is found in the cañons and gorges on the desert slope of the mountains and is know among the Indians as *meskwáh;* it is a rush that grows four feet tall in large tussocks. This plant is in general use and forms the matting framework or body of the images among all the southern California tribes. In the spring of 1918 the Yuma Indians sent one of their number across the desert, a distance of one hundred and fifty miles, at no small expense, to secure *meskwáh* from the Campo Indians, for use in making the images for their ceremony which occurred a few months later. This rush is used also for matting for wrapping tribal ceremonial possessions, and the part near the root is employed in basketry, forming the brown designs; it is further used to make the porous leaching and hat baskets.

The Ceremony

Early in August, 1908, information reached me through an Indian girl that on the twenty-fourth of the month would commence a remarkable Image Ceremony at Weeapipé. So jealously was the secret guarded that, with the exception of a man who had married into the tribe, my son Stanley and I were the only white persons to witness the performance from beginning to end.

On the evening of August 23, after spending two days on the trail with saddle-horses and pack-mule, and crossing the Cuyamaca and Laguna mountains, we descended the steep, rocky trail that led into the narrow, sandy valley of Weeapipé. Many Indians had already arrived, as we observed by their flickering camp-fires throughout the rancheria. A band of picturesque, long-haired, Yuma Indians from Algodones, who had come to assist in the ceremony, had trailed across the desert on burros for nearly one hundred and fifty miles.

After the evening meal, the mourning women gathered in one of the ramadas, or brush shelters, and wailed and sobbed all night. The old men sat in a circle outside with bowed heads and sobbed for an hour or so. Old Pyoné Hílshmeup, head of the Hílshmeup clan which provided the fiesta, then arose and placed his hands succes-

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sively on the head of each one of the old men in the circle, as if in benediction, and then delivered an address. He was probably ninety years of age, deeply wrinkled, almost blind and toothless, but still quite active. All night the Indians sat brooding and mourning.

The next morning, a space of forty feet square was cleared for a ramada. A low bank of earth was raised around the outside, except at the east, which was left for the opening. At a given signal, twenty-five men, including the Yumas, started off for the place at the edge of the valley where the poles, posts, brush, and grass were cached and cut to size ready for building the house of the images. The Indians soon returned, single file, each carrying a post or a pole, or a bundle of grass or of brush on his shoulders. Reaching the site of the structure, as the men placed the poles and other materials on the ground, the women ran out wailing and mingled with the men (who also wailed and sobbed), placing their hands on the men's bowed heads. Two old women poured an offering of corn from their baskets over each post, pole, and bundle of brush; indeed, the women who were entrusted with this special duty made offerings of corn, piñon nuts, wheat, hulled acorns, and pink beans to all materials entering into the construction of the ramada or of the images during the entire ceremony, lasting nearly six days, in this manner scattering altogether hundreds of pounds of foodstuffs over the ground. Some of this food was trampled into the dust, but women belonging to the visiting tribes recovered most of it and consumed it on the ground or took it to their homes. At the close of the ceremony all foodstuffs not used in the offerings, consisting of several sacks, was divided and given away, none whatever being retained by the Hílshmeup clan, which was reduced to poverty by the ceremony.

After wailing for a while, the men placed their burdens on the ground and commenced to construct the brush house, or ramada. Four holes were dug for the posts that were to form the main supports of the structure, and as each hole was dug, an old woman poured in an offering of piñon nuts. She was followed by a Yuma woman, who carefully scooped the nuts into a red bandanna handkerchief and carried them off.

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As soon as the corner posts were set, cross-poles and rafters were adjusted and fastened with strips of willow bark (fig. 1); then bundles

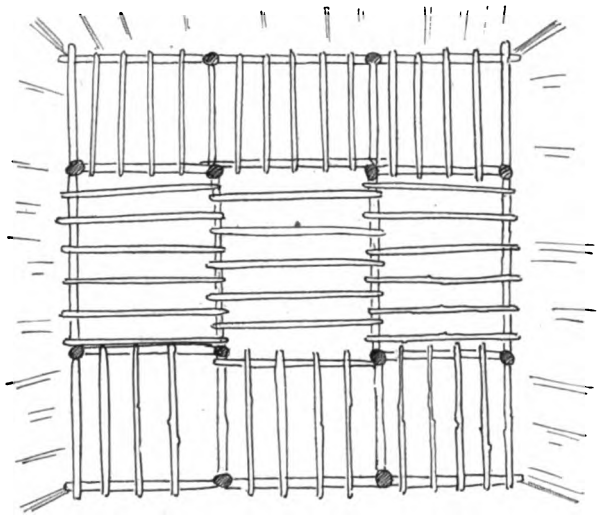

FIG. 1.—Roof plan of the image house.

of long weed-stalks were scattered over the top, and lastly bales of dry grass were spread, which made a perfect covering. Long brush was leaned against the sides and end, completing the rude structure,

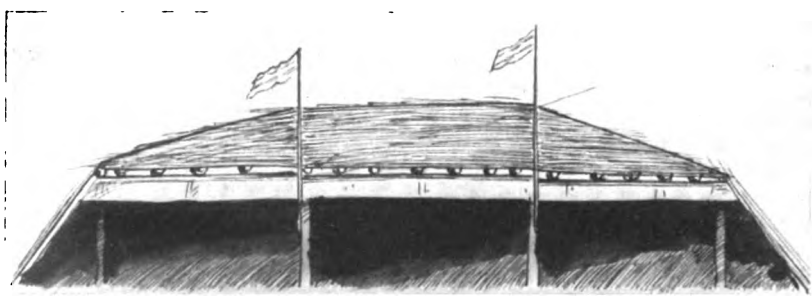

FIG. 2.—Exterior of the image house.

which was closed on all sides except the entrance (fig. 2), which faced the rising sun and the desert, whence these Indians came.[1]

[1] Regarding the ramada, Miss Dubois says: "At the beginning of the fiesta a ramada, or brush building, was constructed, circular except at one end, where it was square. The building of this, like every act connected with the fiesta was done in a prescribed manner according to an elaborate ritual. Each part of the ramada had a name, and a song connected with its construction."—*Editor*.

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The interior was draped with red calico, and two pieces of striped calico, which served as flags, were raised on poles, one at each side of the entrance.

When the image house was completed, trunks, boxes, and bundles were carried in, and at night the structure was filled with mourners of both sexes. One old man sat at the entrance and chanted, keeping time with his ceremonial rattle of deer-hoofs, while the old women began sorting out clothing, hats, scarfs, etc., with which they bedecked six girls and eight boys amid much wailing. The number and sex corresponded with those of the dead and of the images to be made.

When the boys and girls had completed their dressing, led by the old man with the rattle they filed outside and danced all night. As nearly as could be ascertained, this clothing was later to adorn the images. For three nights these young people danced in the new garments around a great log fire immediately in front of the image house.

The chant is believed to describe the wanderings of the tribe before reaching its present place of abode, and the different animals and objects of nature associated with their traditions and folklore. With each canto the dance proceeded round the fire three times and dealt with one object or animal. Now it was the bear, now the frog, then the desert lizard, the coyote, the gopher, the pack-rat, and so on.[1] At the termination of each canto there was a ceremonial rest. At first the dance was merely a step accented by a stamp in perfect rhythm with the song and the rattle; this was followed by a step consisting of a double stamp, which was continued until daylight.

[1] "Where to-day the singers profess their ignorance of the meaning of the songs of the different dances," says Miss Dubois, "it is by no means because, as some have judged, they are in an archaic language, but by reason of the fact that the story of the songs has been forgotten, having been known in perfection only to the chief or leader of the fiestas. . . . Any subject connected with the death would be appropriate for these songs. For instance, one song refers to two brothers who were traveling together when one was bitten by a rattlesnake. He died of the bite, and his brother was afraid of his spirit, which was following and terrifying him. Another song celebrates Ish-pa, the Eagle, killed to make the fiesta, and describes his feelings when he knows that death is near. Another song of Wú-ka-rúk tells of the death of Tu-chai-pa, which was brought about by the evil machinations of the frog."

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Forming the circle around the dancers were Indians from the different rancherias in San Diego county, and some from Lower California, numbering between three hundred and four hundred.

On the first day of the ceremony I made a photograph of the Indians resting their poles and materials for the image house (pl. 1, *a*). The capitan immediately sent a messenger to inform me that pictures of the ceremony, or of anything associated with it, were absolutely prohibited, and nothing must be written or drawn in regard to the fiesta, as everything pertaining to it was to be consumed by fire. It seems that the spirits of the dead are believed to hover about the old homes awaiting the ceremony, which was to release them from their earthly ties to pass to their future world, hence anything, particularly a picture or a photograph depicting a part of the fiesta, that had a tendency to restrain the spirits, was regarded as highly sacrilegious. Thereafter I was under constant surveillance, hence it was impossible to procure a photograph without fear of expulsion. Making a virtue of necessity, I desisted as far as the camera was concerned, but made notes and drawings secretly.

The matron at Campo, where it was necessary for us to make a trip for grain and hay, informed me that the Indians had been saving and preparing for this fiesta for two years. The women had made baskets, sold them and hoarded the money, almost going without food and clothing that the dead might have a fitting ceremony and departure. One old woman, she noted, made and sold several baskets, but never used the money to buy food or clothing, until, up to the time of the fiesta, she had accumulated twenty dollars, a vast amount to her, as it represented the savings of two years. Her withered old hands were cut and scarred by the keen edges of the fibers in making so many baskets, and there were similar cases. Money was collected from relatives far and near; sugar, coffee, flour, and steers were bought, and a wagon was sent to San Diego, and new clothing, hats, ribbons, and bandanna handkerchiefs were procured to dress the images. What sacrifices all this meant to the poorest Indians in California at that time can only be conjectured. The time of giving the fiesta was kept secret for

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months to avoid the presence of white people, and only shortly before the time appointed were invitations sent to the different tribes and to scattered relatives to be present.

On our return to the fiesta from Campo late in the afternoon of August 27th, after I had given supplies of tobacco to the men and red calico to the women, some Indians who knew that I had taken a leading part in the Eagle ceremony at Mesa Grande the year before, told the assembled Indians all about it. They gazed at me with a great deal of interest and curiosity, and made many comments. The knowledge had the effect of placing me before these primitive people in a more favorable light, which I was eager to cultivate. Previously I was merely tolerated; now I was welcomed.

After dark, a little weazened old man, called Jaquét, took the rattles and told those around that he wanted to sing and dance for me for a short time, so that I could admire his chanting. I was duly impressed and commended him highly for his remarkable skill.

The dance this night was similar to that held the previous nights: two or three old men leading in a circle round the fire, and the boys and girls, in all their finery, following in single file with a kind of swinging step and stamp. The dancing always commenced from the image house facing east; then it swung to the north, then east, south, and west. East is the ceremonial direction of these Indians, and three the ceremonial number among all the Diegueño tribes. The *Holshrâ*, or War Dance, is continued for three nights; the *Tapokwírp* or Whirling Dance, is performed thrice; the *Hopasuéy*, or breathings at termination of a dance and also for gifts of food and tobacco, is performed three times, and so throughout their ceremonies the magic number three continually occurs.

On the next day, the 28th, the image house was a busy place, where men and women were preparing the details of the images, in which I was permitted to assist. The eyes, teeth, hair, cloth, mescal-fiber strings, hair rope, sticks for hips and shoulders, and all the minor details of the construction of the images, were prepared, counted, and set aside with minutest care, so that nothing would be missing when the figures were actually to be made the next day.

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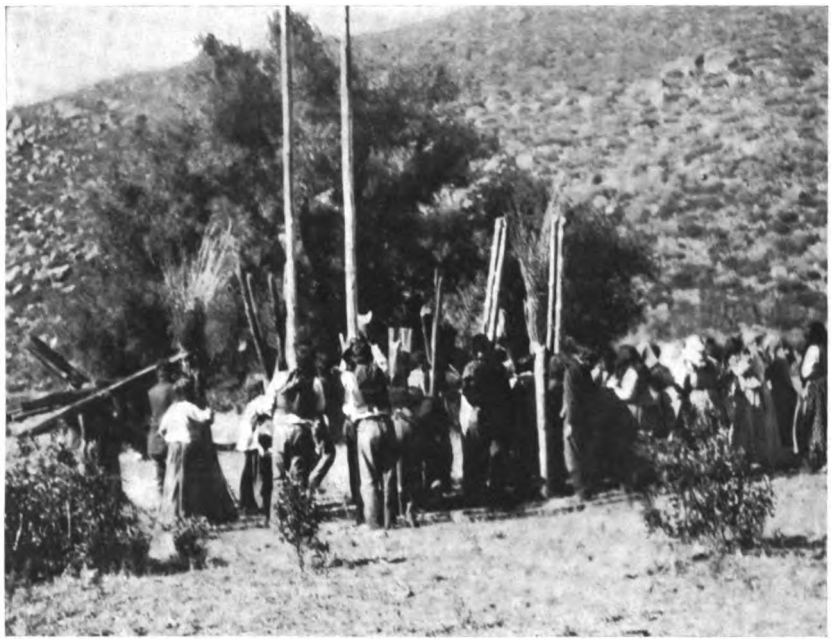

A. INDIANS HOLDING THE POLES FOR THE IMAGE HOUSE. BOTH MEN AND WOMEN ARE WAILING. WEEAPIPE, 1908

B. THE IMAGE PARTLY CONSUMED BY FIRE. PALA, 1904

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A great bundle of flaxen mescal fiber from the desert was brought in, and, on their bare thighs, two old men twisted double-stranded, coarse twine all day long from the threads, in pieces six or eight feet long. This *meskwáh*, as it is called, was woven into a large mat, like a grass rug, by being stitched through and through with threads of sinew or red-milkweed fibers. The mat may be four feet wide by twelve feet long, or possibly two of them may be made, each eight feet long, according to the number of images to be formed from it.

For the eyes of the images large white pearl buttons (in lieu of white abalone shell) were drilled through with knives, pointed sticks inserted, and a black, pitch-like substance from the chamisal was put in the center for the pupils. (See the illustrations following.)

Packages of black human hair were brought in, woven together with strings to form the front and back hair for both sexes, the hair for the girl images being the longer.

Clusters of hawk and eagle plumes, fastened to short pieces of stiff twine with sinew, and these in turn attached to sharpened chamisal sticks, were to be inserted in the shoulders of the male images; owl feathers, prepared in the same way, were for the female images. These were the crude pinions that were to support them in their last flight.[1]

Small oliva-like shells, brought from the Gulf of California by Yuma Indians, threaded and mounted on mescal twine, were to form the teeth of the images.

All the materials, except the matting foundation, for each separate figure were gathered together, tied up in a neat bundle, and laid away for the morrow. The women wailed and sobbed during the making of all these things, and the two old women poured offerings of corn, wheat, or hulled acorns out of their baskets over the materials. Throughout the night the women in the image house

[1] "In the first place an eagle must be killed in a prescribed manner to furnish the feathers for the decoration of the images. A young eagle was secured in the spring and kept in captivity until it was fully grown, when it was killed, as Boscana says, 'without shedding a drop of blood.' This was done by pressure upon the lungs and heart. The red tail-feathers of the yellow-hammer were also obtained, a great number of the birds being slain to secure them. These as well as the owl feathers were sacred to religious use."—Miss Dubois.

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grieved and wailed, and immediately outside, round the great blazing fire, the chanting and dancing continued.

Early the next morning the creation of the images was commenced. This labor required four men one hour to make each figure. A length of matting was held upright by two Indians, and, at three yells given by an hereditary or ancient enemy of the family of the dead, another enemy Indian, with poised bowie knife, swiftly and at one stroke slashed the matting, detaching a strip about fourteen inches wide. This act is called "Splitting the enemy down the middle." Fourteen of such strips were cut from the mat, each designed to form the framework or foundation of an image. One of these was handed to each member of the immediate family of the deceased, who thereupon commenced to make an image, dressing, painting, and ornamenting it so as to resemble as nearly as possible the person whom it was designed to represent. During the time of construction, men and women wailed and sobbed, and the two old women poured out copious offerings of corn, wheat, piñon nuts, and acorns. Some of this food was lost, but the greater part was gathered up by the members of other clans and taken home. At night the corn, beans, acorns, etc., that were thrown over the dancers were trodden into the earth and lost.

Several of the old women, in token of grief, had scarified their breasts to such an extent as to make a network of bloody scabs; their faces were daubed with mescal paint; their hair was unkempt, and with their incessant wailing they presented altogether a wild, uncanny appearance.

After a strip was cut from the mat, the lower half was bisected and cut and rolled into two cylinders and tied with mescal twine to form the legs. The top part was cut in on each side, rolled into a short cylinder and tied, and this formed the head. Just below the head, two pieces of flat yucca stalk were placed crosswise and the ends lashed together for the shoulders, and by the same process the hips were formed. Two sets of small, white, pointed shells, strung on maguey twine and fastened around the head, formed the teeth, and a twig of bent willow, inserted above the teeth, served as a nose. Over the head part a piece of white sheeting was drawn tightly and

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fastened behind. A slit was cut for the mouth, through which the gleaming white teeth projected in ghastly fashion, an effect that was further heightened when the eyes were inserted. When holes were punched into the heads to insert the eye sticks, the women went into a wild paroxysm of anguish, wailing and crying and throwing themselves on each other in heartrending grief that far surpassed their previous lamentations. The men choked and sobbed, and tears streamed down their faces. Following this, paint was applied to the faces, red for the female, black for the male images; a short fringe of hair tied around the head served for the front hair, or bangs, and longer hair for the back hair, and the heads were completed. As each image was made, the women dressed it. If it was a girl, a thin lawn dress, nicely ruffled and trimmed, was put on, also a crimson silk neckerchief, a fine beadwork belt, and plenty of bright ribbons. If it was a man, he was clothed in new trousers, coat, vest, shirt, collar, tie, cuffs, hat, and a neck-scarf of red or blue silk. Many had ribbons around the sleeves, rosettes of bright ribbons pinned to their vests, and shining watch chains and watches. One female figure wore a black silk dress trimmed with lace, and around the edge of the yoke were suspended bangles of dimes which tinkled each time the image was raised or lowered in the subsequent dance.[1]

As the images were being made and clothed, an old woman of the Hílshmeup clan poured on each one a basket of acorns, or a

[1] Miss Dubois describes the making of the images as follows: "When the matting was ready it was slit with a knife in two parts, which, being rolled up separately, made the legs. The upper part for the chest, was strengthened by two sticks laid diagonally crossed upon it. The head was made of the matting with a crooked oak stick carefully selected as to shape, placed in the proper position for the nose. The face was covered with cloth, in early days with buckskin, and the mouth was painted red outside and black within, where teeth carefully shaped from pearls, obtained from the coast, or something resembling them, were inserted. The eyes were of abalone shell, with the pupil a dot of black wax. Human hair was put upon the head. The face was painted and decorated with glistening powdered mica stuck on with thick black mescal juice. The characteristic features of the dead man whom the image represented were reproduced as closely as possible. The finest decorations were then placed upon the figure, bunches of eagle and of yellow-hammer feathers were stuck upon the shoulders, and strings of beads and other ornaments were disposed upon it. Around the neck was hung a net like a small carrying net, holding two tiny decorated ollas to contain food and drink for the spirit on its journey through the unseen world."

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basket of corn, or of corn, wheat, and piñon nuts mixed. In the corn were many kernels of the ancient blue kind sometimes found in cliff and cave dwellings and in old pueblo sites.

When the costume was finally adjusted, each image was taken in charge by a near relative, closely embraced and fondled, mourned and wailed over, and removed to the rear of the brush house, where many of the smaller articles and decorations were fastened on. An indication of how thoroughly the work was done may be judged from the fact that, during nine hours of rough handling in the subsequent dancing, not a hat, garment, or ribbon became loose.

At noon, when all the fourteen images were completed, men and women formed a procession with an old man at the head who chanted to the clacking accompaniment of the deer-hoof rattle. Members of other clans, who did all the dancing, held the images, and, proceeding two abreast, raising and lowering them with a twisting motion in perfect rythm to the chanting, marched wailing and sobbing to the east. Around the charnel pit, where the images were to be cremated, one hundred feet to the east of the image house, this strange procession passed, then back and around the house, and once more around the pit (fig. 3).

During this march two old women threw handfuls of dimes, quarters, and half-dollars broadcast among the onlookers who made a scramble for the money. Some of the coins were tied in silk handkerchiefs and cast among the people, and one girl secured a handkerchief containing a five-dollar gold piece. In all the sum of about fifty dollars was scattered in this manner. No baskets were given or thrown away, nor fastened to the necks of the images. Except as vessels to contain corn and other grains, baskets did not enter into the ceremony, and none were burned.

After the procession had passed twice round the charnel pit and house, the performers stopped in front of the image house and one of the old men delivered an oration, naming each of the dead and detailing their virtues and activities in life. The images were then taken into the house and not disturbed until night.

During the afternoon men and women slept or lay around the camp, resting for the ceremonies which were to close the fiesta.

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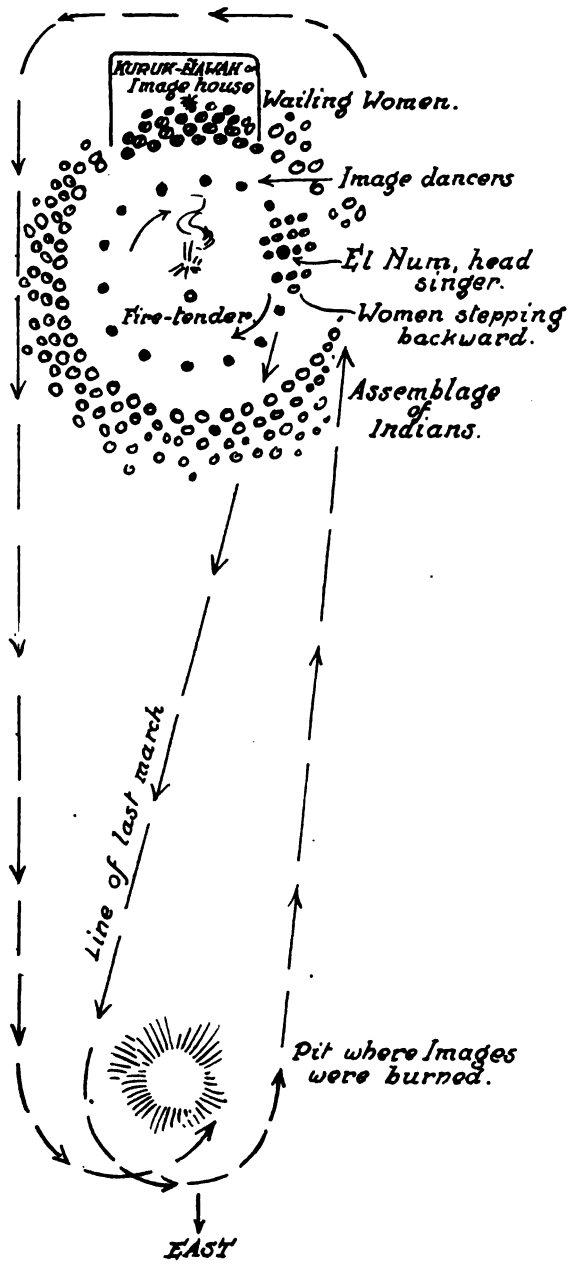

FIG. 3.—Plan of the Death Image Ceremony of 1908.

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The night proved to be mild and beautiful, and the sky was filled with brilliant stars. Around the scattered camp-fires were groups of Indians eating their simple meals, or smoking and gossiping. Under foot and all about were dogs of varying sizes and kinds, but always thin and gaunt. A dog-fight took place every few minutes, affording much amusement to the boys and girls.

The most picturesque Indians were the Yumas from Algondones, with their painted faces, long hair, and brilliant colored scarfs. Tall, straight, sinewy, graceful, active, they formed an agreeable contrast to the fat, heavy-set mountain Indians. Among the latter were a man whose weight must have exceeded three hundred pounds, and a girl from Capitan Grande, seventeen years of age, who probably weighed two hundred and fifty pounds. This girl had very broad shoulders, muscular arms and hands, full bosom, large waist, ponderous hips and limbs, with large feet; but her visage was good-natured in every respect. Most of the women came only to the shoulders of this young giantess.

At eight o'clock, seated in a chair in the image house, a huge Indian, El Num, capitan from Manzanita rancheria, commenced a low chant, beating time with the *tasilsh*, or deer-hoof rattle. This rattle is used only in death ceremonies; for other occasions gourd and turtleshell rattles are employed. Men, women, and children (some babes asleep on their mother's backs) had filled the house, and the women were bestowing the last loving attentions on the images amid much wailing, when El Num, having chanted a number of stanzas, arose with three other men who were chanting in unison and began a slow step toward the opening and then round the great log fire burning in front. The women soon brought out the images and gave them into the hands of the men who were to dance with them all night. As before mentioned, there were fourteen of these, fully dressed, and the rhythmic lifting and lowering of the grotesque figures, with fluttering garments, in the red glare of a great log fire, presented a weird and barbaric scene.

During this time the women filling the image house wailed and mourned incessantly, and one old woman with grizzled hair and with dress open at the breast disclosing a network of bloody scars,

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showered corn over each dancer and image, always wailing in the peculiar wavering cry, wild and mournful, uttered by Indians in sorrow. Her corn supply was in sacks, and from these she replenished her hat basket as soon as it was empty, the corn which she had cast, of course, being trampled into the dust and lost.

During two or three periods of the dance I relieved one of the men, taking charge of an image and dancing in unison with the others. This afforded me an excellent opportunity of observing all that took place.

Each canto of the *Chatŕ*,[1] or Song of the Images, usually carried the dancers around the fire three times, and then the three old women, keeping rhythmical step, facing the men and going backward, repeated the song in a treble for a like period.

After four hours of such violent exertions as to cause the sweat to drip from the image dancers, a rest was taken. The women took charge of the images during the interim, fondling and embracing them, adjusting their garments for the last time, and wailing and sobbing in a paroxysm of grief.

The dance was resumed and continued without further intermission until the morning star, *Cuanyamasáhp*, rose above the rim of the mountains in the east. Thereafter it was closely watched during the dance for an hour and a half, until the surrounding mountains were dimly visible against the first gray light of approaching dawn. It was then 4:15 o'clock in the morning of August 30, and the dance had continued, with one brief period of rest, for eight hours. Blankets, food, and clothing had been packed in bundles and nets, and removed from the image house by the women, a short while before, and now the time had arrived for the final parting. El Lucero had attained its maximum brilliancy and shone with marvelous luster in that pure atmosphere.

With El Num in the lead, chanting the final canto of the *Chatŕ*, the last procession formed and marched with slow and stately steps directly toward the morning star, around the charnel pit, back around the image house, and again to the pit, where each man as he passed deposited his image in an upright position.

[1] Termed *Chā-yo-tai* by Miss Dubois.—*Editor.*

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Up to this time the wailing had been incessant during six days and nights, but now all became unnaturally quiet. The wailing had ceased; there was no talking; even the dogs had become quiet, and only the slight rustle of leaves in the early morning breeze broke the intense silence. Suddenly, the image house, built of dry, inflammable materials, burst into flames fifty feet high, throwing sparks and wisps of burning grass a hundred feet into the air. As the first flames burst forth, an Indian seized a burning brand, ran swiftly to the pit, and set fire to the effigies. The dresses curled up, flames ran up the folds and plaits, and soon all the images were afire (pl. 1, *b*). The grasses snapped, the cloth on the faces scorched and blazed, the hats and hair burned off, but the staring eyes and grisly teeth still stared and grinned. In ten minutes there was nothing left but a mass of ashes and live coals. The framework of the image house had caved in, the posts burned, and by daylight everything was consumed which in any way had been directly connected with the images. The savings of years and the labor of months had vanished in smoke in a few brief moments. The souls of the dead had departed on the last long trail to their final destination, and even their names were never spoken again.

The Death Images from Campo in the Museum of the American Indian, Heye Foundation

The *kurúk*, or death images, made and cremated by the Indians of extreme southern California amid great sorrow and ceremony, are very rare, so rare in fact, that the three images the writer was so fortunate as to procure for the Museum of the American Indian, Heye Foundation, are the only ones in existence, so far as known. The reason for this is not far to seek. Each image made and used in the Wúkarúk ceremony represents a particular person who has died, and this image, and indeed every image ever made for this sacred occasion, and everything pertaining to it, is religiously burned, so that, except ashes, not a vestige remains. Money could not buy one of the effigies, and from the time they are made until cremated they are constantly guarded and handled, and at no time could they be stolen, if one were so inclined, unless possibly his life be forfeited.

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All these images are made and burned the same day, and usually only a few hours after completion. At Pala the images were cremated only two or three hours after being completed, and at Weeapipé, where the ceremony was more primitive and elaborate, sixteen hours after completion. The burning of the images in other localities may vary in time, but none are kept so long as twenty-four hours after they are made. Therefore, with the exception above noted, no museum or private collector has succeeded in securing a specimen of these images, and in fact very few white people have witnessed the entire ceremony, for the reason that the Indians jealously guard all knowledge of the time when it is to occur.

In 1904 I was fortunate in securing permission to photograph an Image Ceremony at Pala among the Cúpano (Hot Springs) Indians, and so far as I know these are the only photographs depicting this rare custom.

The ceremony has become extinct among many of the tribes, and in some places where it still survives it is performed in a more or less perfunctory manner, due mainly to the death of so many of the old men who preserved and revered the ancient customs; to education; to a higher state of white civilization, and to the indifference, even contempt, with which the old traditions are regarded by many of the younger generation of Indians. No doubt this traditionary custom will follow the course of many others and become extinct within a few years.

The making of the images has almost become a lost art, since most of the creators, as they are called, especially in the Campo country, have joined their ancestors, and so I felt especially favored when I found one old image-maker among the primitive Campo Indians who was thoroughly familiar with the task, and, what was of more importance, willing and free to execute my request.

The Indian who undertook this commission, commonly known as Jim McCarty (whose native name is Kwalsh, or Hide), is a man about eighty years of age, of slender build, with sparse white beard and mustache, deep-set eyes, rather flat nose with the septum pierced for a nose-ring, iron-gray hair growing low on the forehead, active

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and alert (pl. II). He is known as the "creator," and the only survivor among these Indians equipped with the knowledge to execute the order.

The first condition to be met was to procure a quantity of the tall rush grass *Juncus textilis*, known among the Indians as *meskwá*, for the foundation of the images. This is a tough, coarse grass

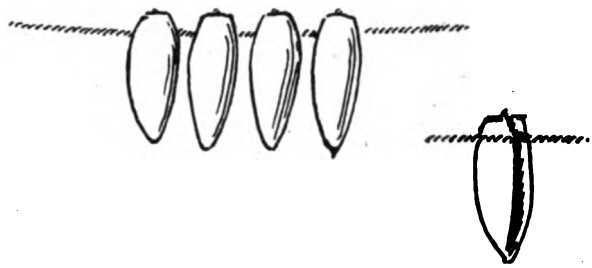

FIG. 4.—Shells strung on cord of mescal fiber to form the teeth of the death image.

which grows in tussocks forty miles distant in Jacumba cañon, a wild, rocky gorge with a clear mountain stream flowing down to the desert. The great flood two years ago uprooted nearly all the *meskwá*, but we found a few hummocks from which we gathered a bundle sufficient for the matting for the three images I desired. For the teeth, *sukul*, it was necessary to have a certain kind of small shells (fig. 4) which come from the Gulf of California and for which

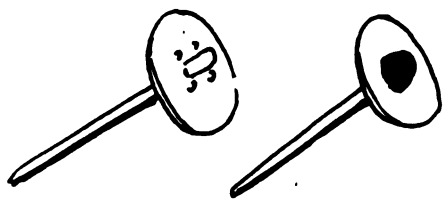

FIG. 5.—Pearl buttons used for the eyes.

these Indians trade with the Cocopah. I was fortunate enough to find a woman who had a handful of these shells, and with much reluctance she parted with enough for the three images. Eight shells furnished teeth for one image, four for upper and four for lower incisors. The pointed top of the shell is ground flat until a hole appears, and through this a fiber is fastened and four of these are tied to a heavy, two-strand twine, which, in these images, con-

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THE "CREATOR" AND HIS IMAGES. CAMPO, 1918

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sists of fiber from the bark of the red milkweed or Indian hemp, twisted on the thigh. In order to comply strictly with the ancient ritual, the eyes should be made of white abalone shell, ground round, with a hole pierced in the center for the pupil, but now large, white, pearl buttons are substituted (fig. 5). These, with dress material, neck-scarfs, beads, etc., I furnished to Jim at his request.

A rug is made of the coarse rush, like matting, by weaving through and through, usually with sinew, but in this case the milk-

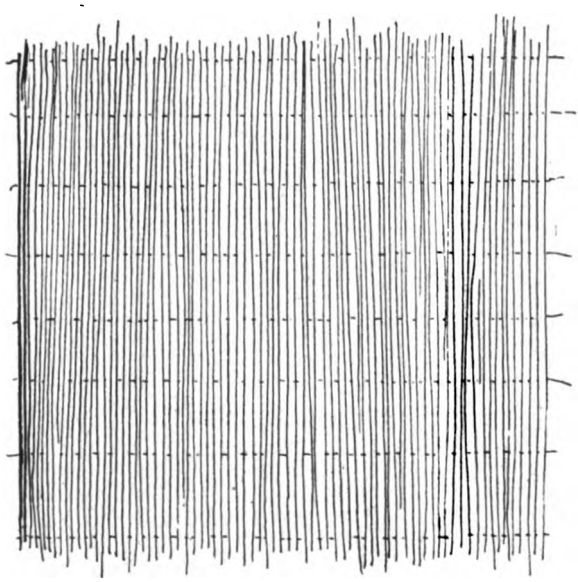

FIG. 6.—A section of meskwáh matting, four feet square, stitched with sinew.

weed fiber was substituted (fig. 6).[1] A strip about twelve or fourteen inches wide is sliced off the mat and this in turn is cut as on the dotted lines in the illustration (fig. 7). The top part is rolled solidly like a thick cylinder and forms the head, while the two lower parts are rolled up and fastened with fiber to form the legs. The shoulders and hips are made from double pieces of yucca, whittled flat, and the ends tied together with fiber. This is the foundation

[1] Miss Dubois says: "To make the images, first of all a woven matting was manufactured by taking a certain kind of tall slim rush for the warp and twine of mescal or yucca or milkweed fiber for the woof.

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of the body (fig. 8). With charming indifference, arms, hands, and feet are dispensed with. A twig of bent willow forms the nose;

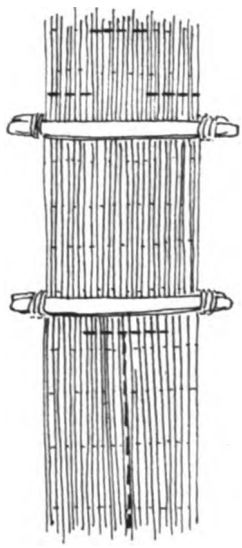

FIG. 7.—The first stage of image making.

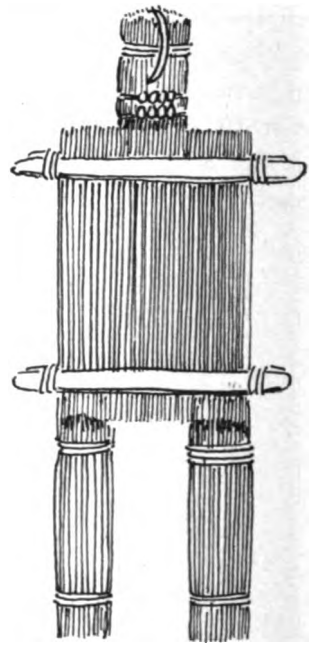

FIG. 8.—The second stage. The bent willow stick forms the nose, and the shell teeth are in place.

the two strings of teeth are tied on and a white cloth fastened tightly around the head. The cloth is cut in such manner that the teeth project prominently; the eye-sockets are punched with sharp

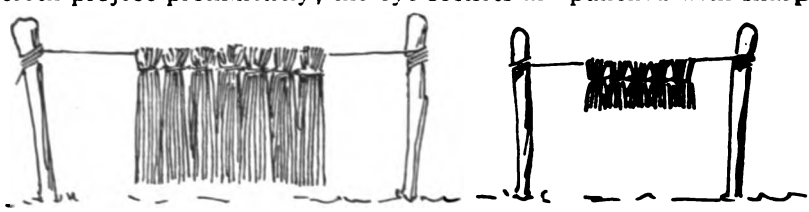

FIG. 9.—Manner in which human hair is plaited to be worn by the images. The long strands form the back hair of female images, the short ones the bangs.

sticks; the hair, which in this case is from horses' manes (fig. 9), is tied on; the faces are painted, and the head part is complete

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IMAGE OF CINON MATAWEÉR. HEIGHT 49 INCHES

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(fig. 10–12). A hat basket is fastened on top, and bunches of plumes adorn the shoulders—hawk for the man, owl for the woman —to waft their souls to their final destination (fig. 13). The faces of the male images are painted black (*kwinyilsh*), and of the female red (*kwawhat*). The foundation for these paints is the dark, sticky juice that exudes between the bulb and leaves of the mescal plant when it is roasted. This is saved in small ollas and painted on the cloth faces of the images, and the powdered black and red colors are sprinkled on and held fast by the sticky fluid. The red color is from red rock near The Needles, and the black is probably plumbago, also from the desert. The red stripes which adorn the chins of female images are called *ukwich*. These mouth stripes ornament the women of Campo and of the desert tribes generally.

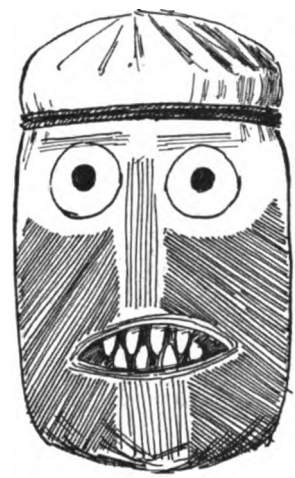

FIG. 10.—Third stage. The nose, chin, lips, and eyebrows are painted red, and the cheeks black.

The figures are supposed to be dressed in the same manner as the originals at the time of death (fig. 14). If the girl had a necklace, the image must have one; if the man had a watch, so must his image. When properly made, the figure is adorned with human hair cut from the women as a sign of mourning; this hair is put aside and later woven into the front and back hair for the images. For a while the matter of procuring the hair proved quite a serious one, as only the relatives of the dead provide the hair. I had given the images personality by naming them for Indians I had known, one of whom, Cinon Mataweér, the last hereditary chief of the Tukamúk, or Mesa Grande Indians, was looked upon as my brother, hence the responsibility of procuring the hair rested with me. The suggestion that perhaps an Indian maiden or matron might be induced to part with some of her locks for a pecuniary consideration was regarded with horror; in fact the idea was unthinkable, as hair furnished for the image of a deceased person, a total stranger,

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would cause almost certain death. We finally compromised on hair from a horse's mane as coming nearest the desired article. This of course was irregular, but then the whole proceeding was necessarily more or less so. It may be assumed that old Jim squared his lack of orthodoxy with the ancient deities in some manner

FIG. 11.—The fourth stage, showing adjustment of the front and back hair, with the hair cord around the face and beneath the chin, fastening the white cloth over the face. This male image is painted red on nose, chin, and lips, and black on cheeks.

FIG. 12.—Mask of female image dotted and striped with red paint.

for this radical departure from the ordained ritual; at any rate, the horse-hair answered the purpose, and harm was done to no one.

For a month nothing was heard from the creator, then on May 2 I received an urgent message to come immediately to Campo, seventy miles distant, as the images were completed, Jim was badly frightened, and the ceremony must occur two days later. I reached Campo on the day of the ceremony at the fiesta grounds, and there found Jim, his wife Rosa, and sixty or seventy Indians from the nearby rancherias to attend the death ceremonies. I was somewhat disconcerted by the crowd, as I had supposed the rites

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IMAGE OF CELESTINA, WIFE OF CINON MATAWEER. HEIGHT 45 INCHES

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would be very simple. On the contrary, they were to be public and strictly in accordance with tradition. Not seeing the images, I asked Jim where they were, and he said they were in his barn or outbuilding, about a mile from the fiesta grounds. Shortly before my arrival the entire camp had had a period of wailing and mourning. Jim had thrown or scattered handfuls of nickels and dimes among the assemblage, and now that I had arrived the principal ceremony was to be performed that night.

FIG. 13.—Hawk and eagle plumes mounted for attachment to shoulders.

Arrived at Jim's outhouse, a structure of poles and brush, I readily found the three images, and an examination showed them to be just what I desired—the chief Cinon with his bow and arrows, his wife Celestina with her painted face and bead necklace, and little José also with a necklace (pl. III–V). The cause of Jim's fear was this: As soon as an image is completed, according to his belief, the spirit or soul enters and occupies it, when the effigy becomes a living personality and the ceremonies must continue uninterruptedly until it is cremated a few hours later. In this case the images had been finished and laid away for three days and three nights, an unprecedented occurrence which was not provided for in the ritual, and so not guarded against. In consequence of this, neither Jim nor his wife Rosa dared go out at night for fear of meeting the ghosts of the images. Jim did have the temerity to venture out a little one night, and said he saw the old chief's ghost stalking about, so he hastened in and never went out again at night until the ceremonies commenced. Not only that, but he would not touch the images of his own creation after they were completed. Should I have been delayed, the ceremonies would have proceeded without me and the images consequently burned.

Returning to the fiesta grounds, which consisted of a hollow square enclosed by ramadas, or brush shelters, I was informed that,

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as the principal mourner, I must furnish food and provisions for the assemblage during the ceremony, and also hire the singers, dancers, fire-tender, and others, consequently I at once sent a messenger post-haste to the nearest store to purchase all the bread, meat, potatoes, coffee, sugar, etc., possible. In an hour's time the food was fetched and pots and kettles were boiling over the campfires, so that it was not long before men, women, and children were fed and happy. The Indians had come sixty or seventy strong, bringing the members of their families, old and young, as well as their dogs, blankets, and simple camp equipment, to stay as long as the food and the fiesta lasted.

FIG. 14.—The completed image.

In order to have the ceremony properly conducted, it was necessary for Jim to be the leader, to sing the proper songs and to make the steps to the music of the *tasilsh*, or deer-hoof rattle, which I had provided. Tobacco was also given the dancers. Two assistants were furnished Jim as singers, two men to dance with the images (the third being myself), a man to supply wood and to tend the fire, and two women to dance backward in front of the singers. These arrangements having been made, we gathered in a circle about the fire in the center of the hollow square, and with Jim chanting, we began the slow, rather stately step around the fire. The images were raised, lowered, twisted, and with fluttering garments made to look as lifelike as possible. When raised the images faced forward, and when lowered they faced backward, all in rhythm with the chanting, while the whole performance was illuminated by the large central fire.

The singers chanted and circled the fire three times to each

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IMAGE OF JOSÉCITO, SON OF CINON. HEIGHT 40 INCHES

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canto. As the song ceased, the dancers immediately began to grunt rhythmically to the beating of the rattle; this was followed by a short ceremonial rest, succeeded in turn by the next canto. The chanting and dancing continued throughout the night for eight hours, with a brief intermission at midnight for refreshment.

The first cantos treated of the death warning of the *uú*, or hoot owl, and the succeeding cantos dealt with the preparations for the death dance, calling the junta or assemblage, gathering the materials, making the images, etc. At the conclusion of the dance the images were wrapped in a tarpaulin, placed on top of a ramada, and left in perfect security.

During the next day there were no ceremonies, but the chanting began again at night and continued uninterruptedly until midnight. Probably the songs described the closing ceremonies of the images, the reincarnation of the souls, the animated figures, the rise of the morning star, the last parade, the cremation and final release of the souls, which, on the hawk- and owl-plume pinions fastened in their shoulders, were wafted to their final hunting grounds far to the south, where it is always warm, with plenty of game and abundance of food of all kinds.

At the close of these ceremonies, the images, without further ado, were handed to me to do with as I liked, to burn or retain, and thus these unique figures came into possession of the Museum of the American Indian, Heye Foundation.

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CONTRIBUTIONS FROM THE
MUSEUM OF THE AMERICAN INDIAN
HEYE FOUNDATION
Volume V, No. 3

CERTAIN MOUNDS IN HAYWOOD COUNTY, NORTH CAROLINA

BY

GEORGE G. HEYE

(Reprinted from the HOLMES ANNIVERSARY VOLUME, Washington, 1916)

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FOREWORD

ABORIGINAL sites within the limits of New York City have almost entirely disappeared, owing to the steady growth of the municipality, hence it is of importance to archeology and history that the few remaining camp- and village-sites of the ancient inhabitants of Manhattan and its vicinity should be explored before the last of them are no longer traceable. Due to the generosity and interest of Mr Samuel Riker, Jr, of New York City, one of the trustees of this Museum, the explorations described in this report, as well as the publication itself, have been made possible.

In 1900, Mr M. R. Harrington made some preliminary investigations for the American Museum of Natural History on the northeastern side of Throgs neck, in the borough of the Bronx, at a site on a little peninsula known as Weir Creek point, where the small creek that gives the point its name discharges into Eastchester bay. This shellheap, situated on the southwestern side of the point, at the junction of Schley and Clarence avenues, was chosen as a promising one for archeological excavations; consequently Mr Harrington, in the fall of 1917, commenced an exploration which was continued, as the weather permitted, until April, 1918, when it was conducted by Mr Alanson Skinner, assisted by Mr C. O. Turbyfill and Mr Amos Oneroad. It is a pleasure to acknowledge the thanks of the Museum for the kind permission given by the Bronx Shore Park Development Company and to Mr Joseph Horowitz, its resident agent, for permission to conduct the exploration.

Traces of another Indian village-site were seen by Mr Skinner while passing along Sound View avenue where this thoroughfare is cut through a high, sandy knoll, midway of Clasons point, Borough of the Bronx, between the mouth of Bronx river on the east and Pugsleys creek on the west, about half a mile from the southern tip of Clasons point. At the place where the knoll

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reaches its maximum height, Sound View avenue is intersected by a cut for the proposed Leland avenue (pl. VIII). A preliminary search of two shell-pits there exposed to view, seemed to indicate the site of a considerable aboriginal village, the exploration of which was commenced in the middle of November, 1918, and continued to completion. This entire work was in charge of Mr Skinner, assisted by Mr Oneroad. Permission to conduct the exploration was kindly accorded by Mr A. P. Dientz of the Sound View Improvement Company, to whom the acknowledgments of this Museum are due. The historical data on the Clasons Point site have been courteously furnished by Mr Reginald Pelham Bolton, to whom we are indebted also for the accompanying maps of survey.

It is proposed from time to time to continue the publication of results of the archeological field-work, as well as of the study of collections derived therefrom, within the limits of the City of New York.

GEORGE G. HEYE,
Director.

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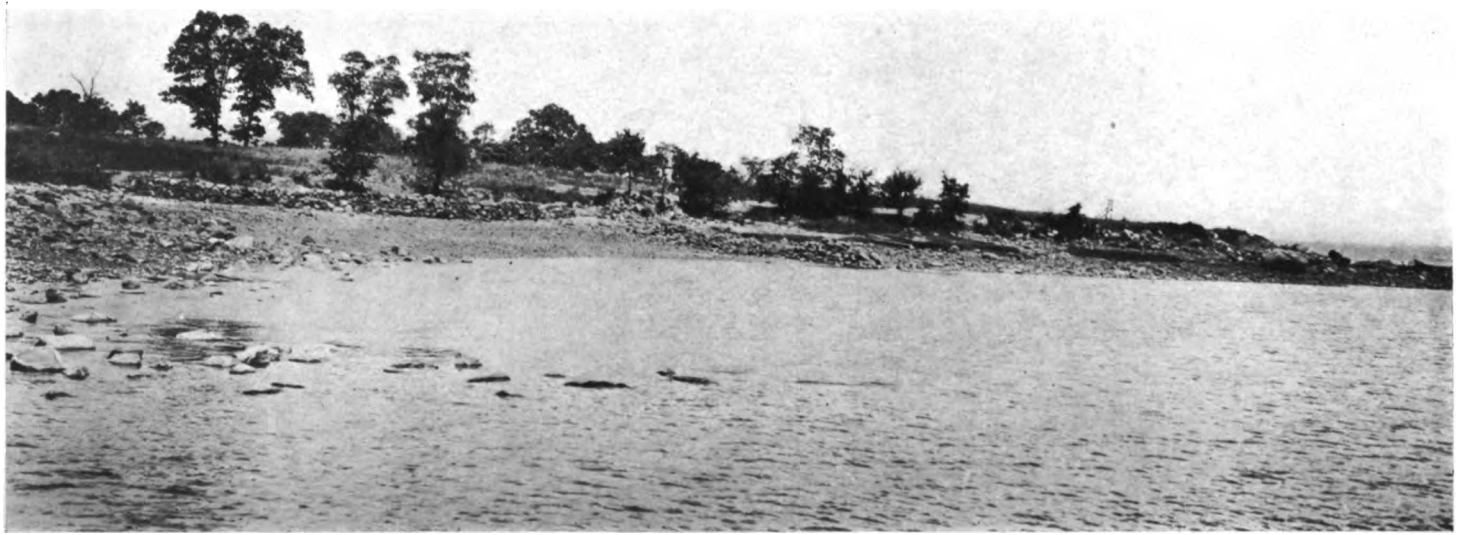

WEIR CREEK POINT, THROGS NECK

(THE SHELLHEAP SHOWS AS A LIGHT LINE BEHIND THE TREES AT THE RIGHT CENTER)

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I.—THE THROGS NECK OR SCHLEY AVENUE SHELLHEAP

HISTORICAL INTRODUCTION

THE historical material relating to the Indian settlement on Throgs neck is necessarily meager, for the contents of the shellheaps pertain largely to a period which comparison with other local remains has shown us to have terminated prior to the arrival of white settlers. It is true, nevertheless, that on the surface of the shellheaps, and in what we have called the later pits, there was evidence of European contact; for example, the presence of foreign trade articles and the bones of swine; but these were so limited that the Indians who abandoned them either were few in number in post-Colonial time, or, as seems more probable, did not occupy the site for any considerable period. This is more forcibly brought to our attention by the facts that the relics due to civilization belong to a time decidedly later than the first arrival of the Dutch, and that there were Indian settlements nearby at Castle Hill neck and Clasons point known to have been occupied when the Hollanders bought the land. Moreover, these few foreign specimens referred to belong to a type in vogue during the Indian war of 1643. At that time, the Siwanoy having the previous year sold their holdings at Clasons point to Thomas Cornell, they in all probability removed at his order, and may well have returned for a brief period to their ancestral land at Throgs neck. This evidence also perhaps accounts for the large number of dead in comparison with the total number of later pits, for the Dutch hunted down and slew large numbers of local Indians in out-of-the-way camps. Moreover, the condition of some of the skeletons also indicates death by violence, some being dismembered and others lacking portions of their complement of bones. (See pages 54–56.)

The Indians who claimed the land on which the Throgs Neck or Schley Avenue shellheap is situated were a small Algonkian

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tribe of the Wappinger confederacy, called Siwanoy.[1] The earliest reference which the writer has been able to find of their presence on Throgs neck is in the account of Captain Thomas Dermer,[2] who in 1619 sailed along the coast under orders from Sir Ferdinando Gorges, afterward one of the proprietors of New Hampshire. He says of Throgs neck: "A great multitude of Indians let fly at us from the bank, but it pleased God to make us victors. Near unto this we found a most dangerous cataract amongst small, rocky islands, occasioned by two unequal tides, the one ebbing and flowing two hours before the other." This, of course, was Hell Gate.

In September, 1642, John Throckmorton, or Throgmorton,[3] applied to the Dutch authorities for permission to occupy the tract called Vriedlandt, or "Land of Peace," on the shores of Long Island sound, with thirty-five families, and in October of that year he settled on the neck whose name is derived from his own, receiving his patent, or "grond brief," the following year.

This colony was composed of Quakers and others who had left New England because of religious persecution. Indeed, Throgmorton was a personal friend of Roger Williams. The settlement fell during the Indian war of 1643, when eighteen persons were killed, probably by the same party of Siwanoy who, under their chief Wampage, had formerly slain Ann Hutchinson, the celebrated religious fanatic who settled near Pelham Bay.

THE SHELLHEAP

One of the most extensive Indian shellheaps in or near New York City is situated on Weir Creek point, Throgs neck, Borough of the Bronx (pl. 1). The southwestern side of this point, which contains the angle formed by the junction of Schley and Clarence avenues, is a sheltered nook, warm and well-drained at all seasons of the year. An abundance of fish, shellfish, and fowl still may be

[1] Ruttenber, E. M., Indian Tribes of Hudson's River, p. 81. Beauchamp, Wm. M., Aboriginal Occupation of New York, *Bull. 32, New York State Museum*, indicated on tribal map. Skinner, Alanson, Archæology of the New York Coastal Algonkin, *Anthropological Papers, American Museum of Natural History*, vol. III, pp. 231–2.

[2] Jenkins, Stephen, The Story of the Bronx, N. Y., 1912, p. 40.

[3] Ibid., p. 30.

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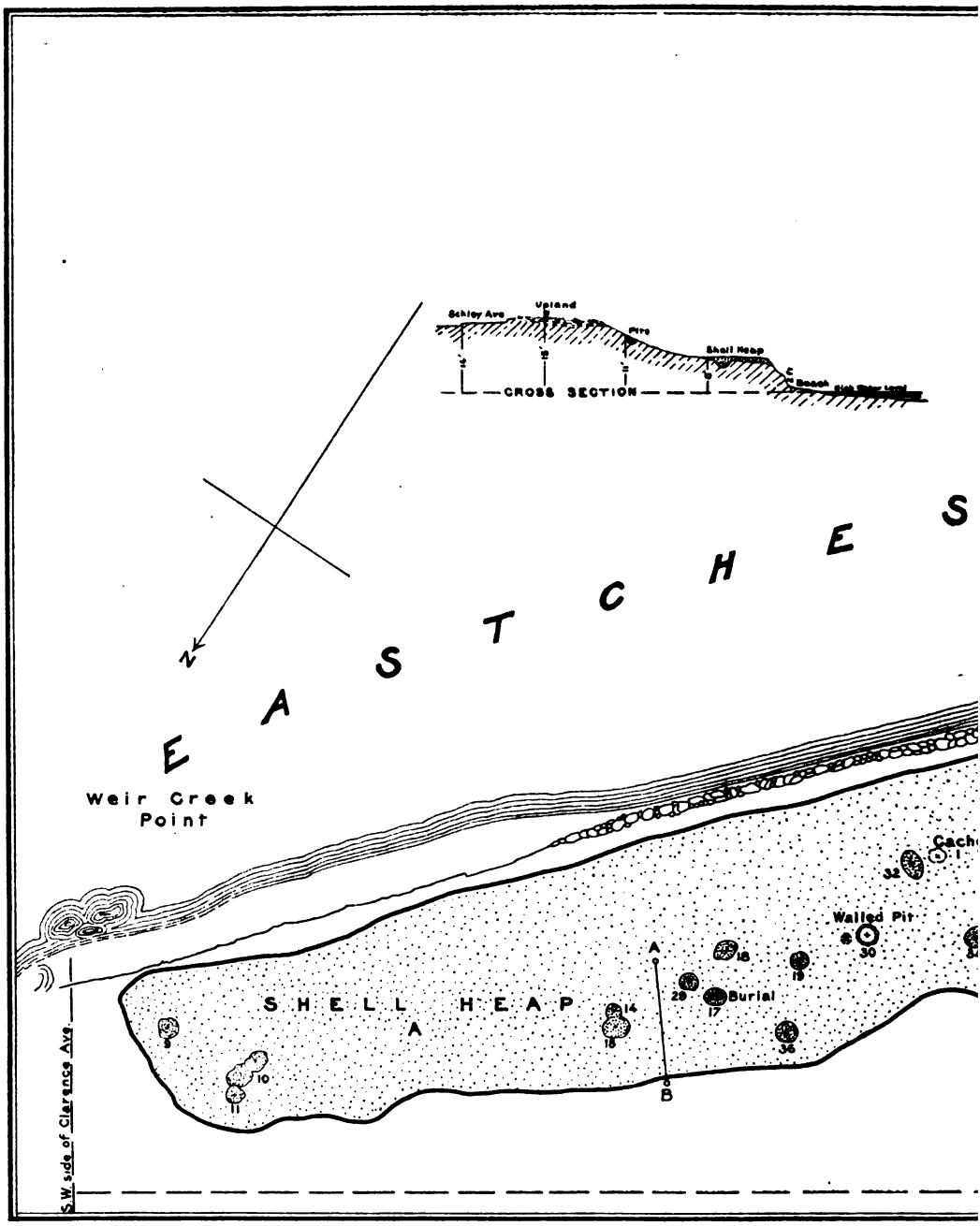

INDIAN SHELL HEAP

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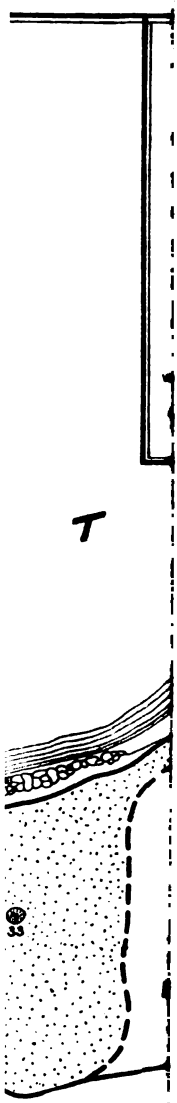

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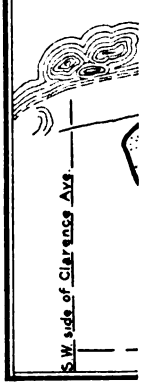

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found, though in yearly diminishing numbers, in the surrounding waters of Weir creek and Eastchester bay. In pre-Colonial times, when the region was heavily wooded, many land mammals, such as elk, deer, and bear, were common. A couple of springs, one now submerged near a great rock that is covered at high tide, furnished fresh water. Thus this little hollow by the shore nestling under the upland was wholly sufficient for Indian needs.

The southeastern part of this shellheap deposit, shown on the map (pl. II) as Shellheap A, is of considerable extent, the shells in some places reaching a depth of from four to five feet. This part of the heap was long supposed to be stratified with progressively ascending cultural layers; in fact, Mr Harrington in his earlier work[1] reported this to be the case. The strata not being perceptible to us in our more extended work, the deposit was divided into three arbitrary sections, namely, lower, middle, and upper, and all objects found were segregated according to position. At the conclusion of the work a careful quantitative analysis was made, which resulted in showing certain differences between the top and the bottom of the deposit. These will be commented on in our conclusions.

The northern part of the shellheap, called Shellheap B, was composed of a single layer, too thin for division into strata. This layer was irregular in shape, and its greatest depth, near the shore, was about 2½ feet, varying as it extended inland to 5 inches some 75 feet from the bank. Everywhere barren patches occurred, which however showed signs of occupancy, such as burnt stones and chips. Pits, as may be seen from the map, were not infrequent, and were both ancient and probably historic.

Artifacts of stone were picked up on the beach. Some of these had no doubt been washed from the shellheap, while others may have been lost on the shore by the Indians. As all these objects had been washed and mingled by the tides of centuries, their classification by age or position was not possible. Among them were banner-stones, gorgets, net-sinkers, hammerstones, arrow-points, and celts.

[1] Quoted by Skinner, Alanson, Chronological Relations of Coastal Algonkian Culture, *Proceedings of the Nineteenth International Congress of Americanists*, Washington, 1917, p. 57.

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Along the northern part of the beach stretches what may be termed a secondary shellheap, composed of oyster-shells and small relics washed from the great heap and redeposited by the action of the waves, along the upper reaches of the strand. This heap contained only the lighter and more durable objects, such as arrow-points, the heavier artifacts, such as axes, being left on the beach, while potsherds and bones had been destroyed by the waters.

Throughout the shellheap were found pits, dug for the reception of refuse and for other purposes, and west of Deposit B, on the edge of the upland, occurred a particularly notable group of these, which, according to their appearance (the shells being undecayed), and their contents, we have placed in a later group than the ancient pits in the heap itself. These pits are indicated on the map by a special symbol (⊠). A few other examples of later pits were also found in the shellheaps. An account of the pits follows.

The Later Pits

Pit 1: A large oval pit, measuring 6 ft. 10 in. from north to south and 5 ft. 8 in. from east to west. Near the surface a layer of oyster and other shells, 14 in. thick, was first encountered; in this were found a number of sherds from an Algonkian earthen vessel, two bone awls, and a stone arrowhead. Under this shell layer a confusion of human bones was next encountered, the bones representing two individuals, but only one skull being present. Beneath these two bone burials and in the northern side of the pit was unearthed the skeleton of a young woman, at a depth of 2 ft. 11 in.; the knees were flexed to the left, and the head was directed northeastward, face down. At the same depth a fourth skeleton was found, on the southern side of the pit; this was flexed on its abdomen, with the head pointing northwestward and the face to the left; the folded legs were turned to the right; the bones were fairly well preserved in this instance, whereas only portions of the others were recoverable in good condition. Many fair-sized stones lay in this pit under the skulls, and one weighing nearly 100 pounds was placed over one of the skulls.

Pit 2: This had been a roundish hole in the stony soil, now

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filled with much-blackened earth and a few shells. Large stones had apparently been rolled into this pit by the natives, including one of about 200 pounds. A few animal bones occurred, and, at the bottom of the pit, 28 in. from the surface, a pile of stones lay on a broken but practically complete pottery vessel of sub-Iroquois type (pl. VII, *a*).[1] The pit was 4 ft. 3 in. in diameter.

Pit 3: This pit was 4 ft. 3 in. in diameter by 2 ft. 8 in. deep. It held large stones, a few shells, two small potsherds, and a few animal bones. The pit resembled a grave from which the body had been removed for reinterment or the bones destroyed by decay.

Pit 4, A and B: A nearly round pit, 4 ft. 1 in. in diameter by 2 ft. 3 in. deep. This pit contained only shells and black earth. Cutting into it was Pit 4 B at the southeast. This was 2 ft. deep and 2 ft. 7 in. in diameter, with the same sparse contents.

Pit 5: This pit, on the hillside below Pits 1 and 2, was almost round, being 4 ft. 4 in. in diameter, and 3 ft. 1 in. deep. It was filled with dark earth, stones, and a few shells. Among these were a few bones of animals and some potsherds, but at the bottom, which was flat, were found nearly all the fragments of a pottery vessel of modified Iroquois type (pl. VII, *b*).

Pit 6: An irregular pit, 5 ft. 11 in. north to south and 3 ft. 3 in. east to west, depth 2 ft. 8 in. It contained many shells, principally scallops, some dog-bones, a few deer-bones, and a broken bone awl.

Pit 7: A large pit, nearly round, 8 ft. 8 in. in diameter, 3 ft. 3 in. in depth. This pit contained dark soil mingled with a few shells, dog and other animal bones, potsherds, a triangular point, and a hammerstone. In the center of the pit, at the bottom, was a pile of stones weighing 10 to 50 pounds, under which lay the upper portion of the skeleton of a person about fifteen years of age. The skull was pointed northwestward; the body lay on its back with

[1] This sub-Iroquois pottery is a blending of the native Algonkian pottery, which is characterized by a pointed base, oval body, and wide mouth, with the round-bottomed type in vogue among the Iroquois, which also has a narrow constricted neck and an ornamental round or angular collar, further elaborated by three to four peaks or humps at intervals along the rim. In the sub-Iroquois specimens the rim and its ornamentation are usually modified and much less exaggerated than in the true Iroquois forms. See Archæology of the New York Coastal Algonkin, *Anthropological Papers of the American Museum of Natural History*, vol. III, pp. 222, 223, and fig. 35 *f*, *g*.

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elbows at the sides and hands on the shoulders. A stone weighing 30 to 40 pounds lay on the skull, and another, smaller and flatter, had crushed the chest. On the pile of stones were fragments of the skull of an aged person, minus the lower jaw. A few small human bones were found scattered in the pit.

Pit 8: This pit was 3 ft. in diameter and 1 ft. 5 in. deep. In the densely packed shells was the skeleton of an old dog, headed westward, lying on the left side. Nearby was a rude net-sinker of stone.

Pit 27: This pit was shaped like a round bowl with a flaring rim, the edges of the rim being carefully walled round with water-worn stones. In breadth the pit was 4 ft. 3 in. and in depth 2 ft. 5 in. Its principal contents were a large quantity of closely packed oyster-shells, which appeared fresh and new; many of them were charred black, and in some cases masses were even reduced to lime by intense heat. Clam-shells (quahog) and scallops also appeared sparingly. Charred hickory-nuts and walnuts, calamus roots, charcoal, burnt reeds, and a portion of a charred wooden tool (an awl or a needle, perhaps), were found. Two bone awls, a broken bone arrowpoint, a notched stone net-sinker, and part of an earthenware vessel of sub-Iroquois type were obtained.

Pit 28: A round, bowl-shaped pit; breadth 3 ft. 6 in., depth 2 ft. 9 in. This deposit was composed of oyster, hard clam, and mussel shells, fresh and bright, as in Pit 27, but more loosely packed, with occasional spaces where the dirt had not sifted in. The bottom of the pit had been subjected to severe burning, and burnt earth, calcined shells, and charcoal abounded. In several large areas the shells had been completely reduced to lime, portions of which were saved. A few deer- and fish-bones, one charred hickory-nut, a flint chip, part of a well-polished bone awl, and a few sherds of two vessels (one a small toy jar of Algonkian type, perhaps the size of a teacup), were found. This pit, which was close to Pit 27, seems to have been dug and filled contemporaneously with it.

Pit 30: A round, bowl-shaped pit, the bottom and sides of which were completely walled up with small cobbles—an unusual feature. It held shells of oysters, scallops, hard and soft clams, and

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mussels; also ashes, charcoal, burnt hickory-nuts, quartz chips, abundant deer-bones, the butt of a polished bone awl, and some Algonkian potsherds.

Pit 38: An oval pit, 7 ft. long, 4 ft. deep, and 4 ft. 8 in. broad. A large, flat bowlder of about 300 pounds weight covered the top. The shells appeared to be relatively recent. At the bottom was a group of well-burnt fire-stones. The contents were a finely cut shell cup (pl. IV, *n*), a small bone awl, a few sherds, deer-bones, and the familiar curved bone from a raccoon.

The Ancient Pits

Omitting those pits the form or contents of which were negligible, there remained the following:

Pit 12, of great size, 8 ft. 8 in. in diameter by 5 ft. 10 in. deep, was of truncated cone shape in cross-section. It was filled chiefly with large bowlders.

Pit 14, of oval shape, 3 ft. 4 in. long, 2 ft. 2 in. broad, and 5 ft. 3 in. deep, was notable because it was dug directly under the shell-heap, which later was deposited over it. It held one potsherd.

Pit 15, unlike the preceding, had been dug down, through the shellheap, from near the surface. The heap was here 2 ft. 8 in. deep; the pit was 5 ft. 4 in., and antedated it to some extent. The pit was 7 ft. 4 in. in diameter and held a few sherds.

Pit 17: At a depth of 1 ft. 10 in. a stone slab weighing about 20 lbs. was found. Under this was the flexed skeleton of an infant, lying on its left side, headed westward. A stemmed quartz arrow-point lay below the knees. The earth was discolored and black for 8 in. beneath the remains.

Pit 18 was an ancient pit dug from near the bottom of the shellheap down into the virgin earth, but *Pit 19* was cut in from near the top.

Pit 20 was semilunar in outline, and *Pit 22* was of V shape, the arms measuring from tip to apex 8 ft. 3 in. and 11 ft. respectively. They were both about 3 ft. broad, and the depth varied from 2 ft. 6 in. to 3 ft. The apex of the V pointed down the slope.

Pit 26 was large and of irregular shape, dug on the western side

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of a bowlder 7 ft. long. The pit measured 11 ft. long, 4 ft. 3 in. wide at the broadest point, and 3 ft. deep. It held a few shells, deer-bones, a notched stone maul, and a grooved axe (pl. v, *c*).

Pit 29 was dug in from about the center of the heap, the upper half of the shells having accumulated later.

Pit 31 was an old pit which had been cut into in more recent times by the Indians who dug the later Pit 28. It held nothing.

In *Pit 32*, a little cache of four arrowpoints, all stemmed, was found at the bottom.

Pit 36 was quadrangular, being diamond-shaped in outline.

Pit 37 was really a fireplace, a small round basin of stones, with a pile of hard clam-shells, 18 in. high, and two large potsherds over it.

Pit 40 was shaped like an inverted truncated cone, 3 ft. in diameter at the surface and 18 in. deep. It was under the northeastern corner of a large patch of shells that constituted a small, independent, shallow heap. In it were the badly decomposed remains of a baby's skeleton, and some coarse, disintegrated sherds of a half-fired vessel of archaic Algonkian type.

It will be noted that these ancient pits are more irregular in form than the later ones. Elk-bones were found frequently among their contents, but this was not the case with the later pits either at this site or at Clasons point.

BONE ARTICLES

The Schley Avenue shellheap was fairly prolific in bone implements, although on the whole their quality is poor, and this is true also of specimens of worked antler. No great variety in form was observable, but some rare and interesting types were collected.

Of about one hundred whole and fragmentary bone awls, the great majority were merely sharpened splinters of deer- or elk-bone (pl. III, *b–f*), showing no care in workmanship. None were made of bird-bone. Figs. *j*, *k*, of the same plate, illustrate awls from the newer pits that exhibit some care in their manufacture and have polished surfaces. Fig. *i*, from near the surface of Deposit B, is a worked and polished spine from a sting-ray, both sides of which

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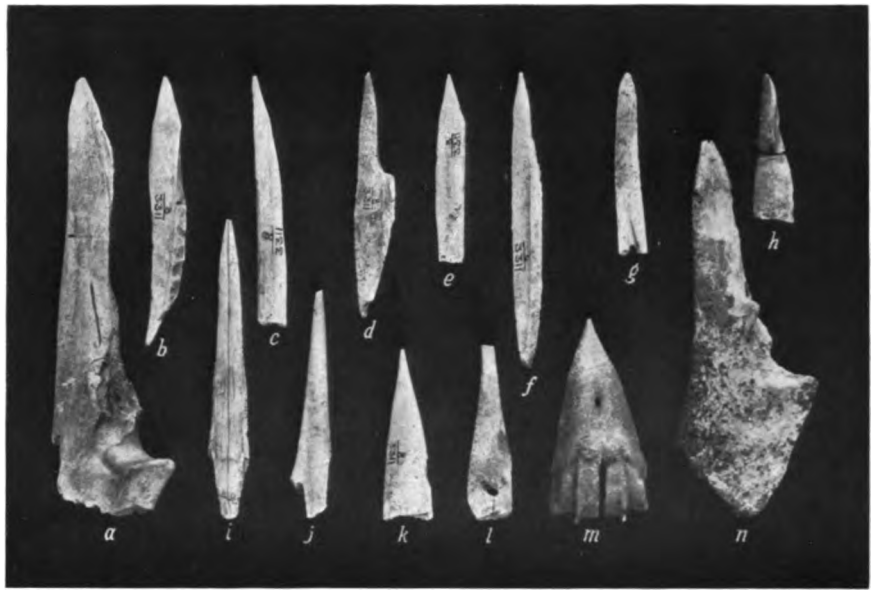

BONE IMPLEMENTS FROM THROGS NECK

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are slightly scored near the point, in addition to having the natural notches near the base. Similar awls, or possibly projectile points, were found by the writer in pits on the Bowmans Brook site, Mariner's Harbor, Staten Island.[1] They apparently belong to the era of early Iroquois influence, although not themselves a part of the alien culture complex.

Pl. III, *a*, *n*, represent awls made by merely sharpening the small end of the ulna of the deer, leaving the distal end as a hand grip, and fig. *m* is a carpal bone from the same animal utilized in a similar manner, but showing an unusual amount of labor. Fig. *l* shows a perforated awl or needle, flat and broad at the base. A similar but neater specimen was collected by Mr Reginald Pelham Bolton in a shell-pit containing two dog burials on Seaman avenue, Manhattan Island.[2]

A bone needle, broken but showing the original to have been flat and perforated in the middle, is illustrated in pl. III, *g*. Such are not very abundant, but are known from many local Algonkian sites, and are far commoner in the Iroquois country. In this example the eye was made by grating deep longitudinal grooves on both sides of the implement until they were cut through at the center. The needle is made from a rib of some animal. Similar needles are used to this day by the Algonkian tribes of the middle west and north in snowshoe making and for sewing bullrushes together to make mats. The writer has described the form in his paper on the Archeology of the New York Coastal Algonkin.[3]

A new type of bone awl from the tidewater Algonkian region of New York and New Jersey is shown in the six specimens illustrated in pl. III, *o–t*. These awls are peculiar in that they are not only well made and polished, but the butts terminate in a deeply notched head, the notches perhaps having been made to facilitate suspension. Fig. *p* shows the process to have been that of grating with a flint flake or knife, the scores later being ground away. This seems to

[1] Skinner, Alanson, The Lenape Indians of Staten Island, *Anthropological Papers of the American Museum of Natural History*, vol. III, p. 45, pl. X, figs. 20, 21.

[2] *Anthropological Papers, American Museum of Natural History*, vol. III, p. 88, and fig. 7*c*, p. 87.

[3] Ibid., p. 229.

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be a true and archaic Algonkian form, for these awls were found at all depths in the shellheaps. They were subsequently found by the writer in the shellheap at Inwood, Manhattan Island, and in the later pits at Snakapins village at Sound View and Leland avenues, Clasons point. That they have escaped discovery and description until now is rather remarkable.

Fig. *h* shows a nondescript bone sliver, having a sharp, chisel-like and somewhat worn end, which has been partially cut in two by sawing a groove about it. Its purpose is problematical.

It is worth noting that no worked tortoise-shell, so common at Sound View and Leland avenues, was found in the Schley Avenue shellheap. Probably tortoise-shell cups and rattles came later.

ARTICLES OF ANTLER

Two varieties of antler were used for making implements by the Schley Avenue Indians, namely elk and Virginia deer, according to the specimens recovered.

Wedges of elk- and deer-horn, with rounded butt and chisel-like edge, were not infrequent deep in the heap, but none were found in good condition for illustration.

Pl. IV, *g*, represents a heavy section of antler, cut off at the base with the usual stone knife, and slightly hollowed, as though for use as a handle. Like all the other antler specimens found, the workmanship displayed is of a low order. The smaller end is broken.

Fig. *f* shows a clumsy, ill-made antler cylinder, one end being somewhat enlarged. It seems too coarse to be a chipping tool for flint-working, yet that such it was is indicated by the wear on the smaller end. It is a fairly common form on most old Algonkian sites. The later generations hereabouts made these implements better, dressing them down to a thin and shapely cylinder.

Fig. *a* is in shape quite like the preceding, but is hollowed rather deeply at the larger end, as though to receive a pointed object. Very likely it is a handle for a bone sliver awl.

Figs. *b–e* exhibit four of the usual rough antler arrowheads from this site. They retain for the greater part the natural shape

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ANTLER, SHELL, AND OTHER OBJECTS FROM THROGS NECK

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of the prong tips from which they were cut, with little attempt at sharpening. All are more or less hollowed at the base to be fitted on the arrowshaft and fastened with some adhesive substance. Fig. *e* has one barb, whereas most of the antler points from Schley avenue are without this feature.

Fig. *b* has a scale of antler flaked off at the base, and shows the form and approximate depth of the conical boring made for the shaft end.

ANIMAL-TOOTH PENDANTS

Pl. IV, *h*, *i*, represent two large canine teeth of the black bear, one grooved at the base of the root, and one perforated for suspension. They are probably from a necklace. Both came from well under the surface of the shellheap and are consequently not of the later period. In this region pendants made of bear-teeth, or indeed the teeth of other animals, are not known except in the case of the specimens illustrated, although they are abundant throughout the Iroquois country. In fig. *i* the boring is roughly done with a stone tool.

Figs. *j*, *k*, illustrate two small canine teeth from the otter and the dog, perforated as pendants. These too are not relics of the more recent occupancy.

IMPLEMENTS OF STONE

Grooved axes were not numerous at the Schley Avenue site. Three only were obtained, two of these in the lower part of the heap and one in an ancient shell-pit.

Pl. V, *a*, *c*, illustrate the two best specimens, *c* being the example from Pit 26. It is typical of this locality, and, like the other two found, is surrounded by a groove. *a* shows an axe which, when it had become too dull for chopping, was used as a club or a maul until finally the blade was nearly battered away.

Fig. *b*, is a crude, notched axe of light-gray quartzite, found under the bottom of the shellheap at its deepest part. When unearthed it was thickly coated with an accumulation of lime carried by the seepage of water through the shells, as was often the case with the older specimens at the Schley Avenue site.

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Figs. *d–g* of pl. v show four of a total of fourteen celts from Schley avenue. Fig. *d* is a well made, pecked, and partly polished celt from near the surface of the heap that belongs to a later time. The celts from within the heap are crudely made, principally by sharpening flat pebbles approximating the shape desired.

FIG. 1. — Celt showing secondary usage as a "sinew stone."

Fig. *e* of pl. v is a chipped celt found on the beach. It is not a common form hereabouts.

Fig. 1 exhibits a celt interesting more on account of its secondary usage than otherwise. This implement became dull, was used as a hand-hammer for a time, and then was subjected to long service as a "sinew-stone," as shown by the deep-worn scores in its side.

Pl. v, *g*, is a narrow, chisel-like example from the beach, which would serve nicely as a woodworking tool.

In fig. *f* we have a chipped, celt-like tool of the type found so abundantly in the steatite quarries of Massachusetts, Connecticut, and elsewhere, and used as a pick in hollowing-out soapstone vessels. Fragments of a steatite pot were found at Schley avenue, and some, brought rough-hewn from the quarries, may have been finished there.

The mouthpiece of a stone pipe was found, but its form cannot be conjectured from the fragment.

Five banner-stones, whole or fragmentary, were found in all, of which three came from the heap and two from the beach. Pl. v, *i*, illustrates a crude example, grooved on one side, found at the very bottom, in yellow soil beneath the shells of Deposit A. It is a type found throughout tidewater New York, Pennsylvania, Connecticut, and probably New Jersey, although the writer does not recall having found or seen a similar example from the latter state. Presumably the form is archaic.

Fragments of two banner-stones, both perforated with a hollow-

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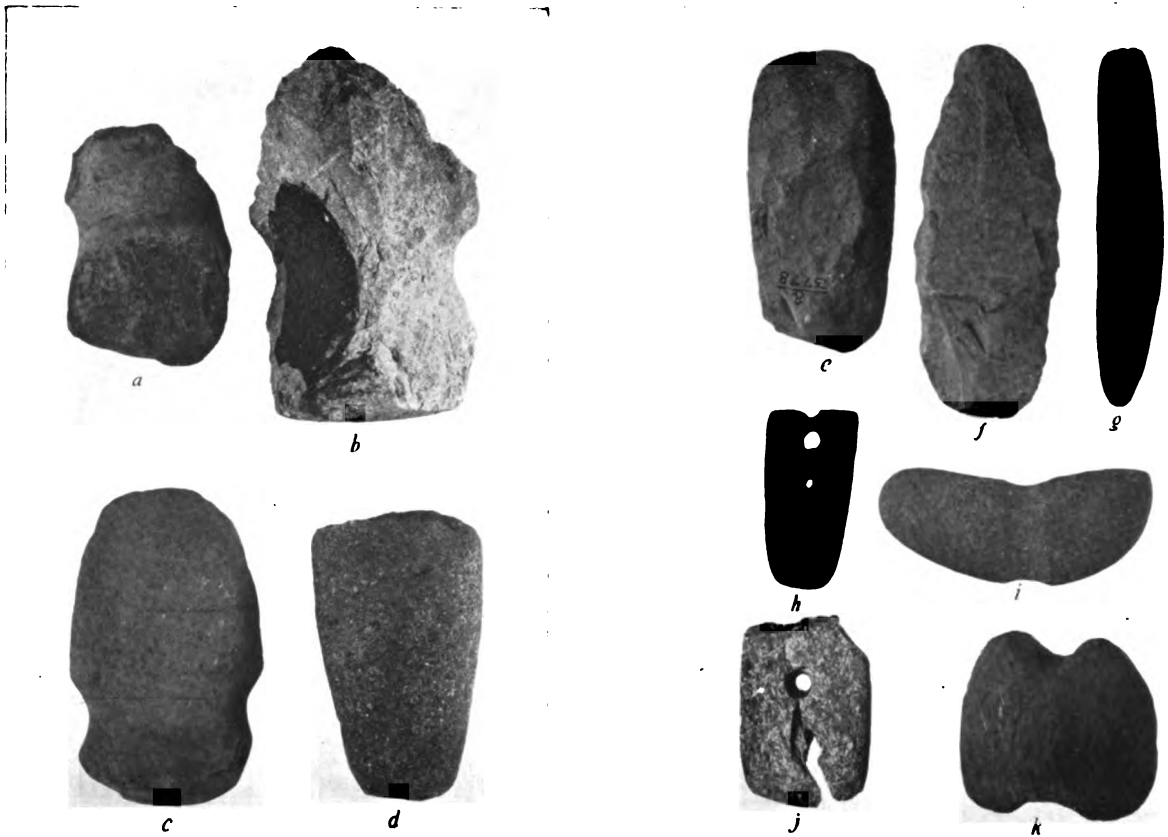

PECKED AND POLISHED STONE IMPLEMENTS FROM THROGS NECK

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core drill, were found about the middle of the heap. Mr M. R. Harrington says[1] of this form: "I have never discovered any of the drilled variety in a shell heap, but have heard of their being found."

A small fragment of a perforated banner-stone was picked up by the writer on the beach at Schley avenue, and also the one shown in fig. *k* of pl. v, an unusually perfect specimen, carefully pecked into a kind of modified butterfly shape, with pronounced median ridge, but as yet not perforated. The material is a banded slate-like stone, which, had it been smoothed, would have given a handsome appearance. The specimen was found among rocks on the southern portion of the beach, and was probably under four feet of water at high tide. It was presumably washed from Deposit A, which here comes close to the shore.

One gorget of the single-holed or pendant form, in poor condition, was likewise discovered on the beach. From various levels in the heap, except the top, fragments of at least five others were found, four apparently of the variety having two or more holes; the other is indeterminate. Pl. v, *h*, *j*, represent two of these, both of rather unusual material. Fig. *h* is made of what appears to be clay concretion, and has one end missing; the fragment remaining, however, shows three holes, across one of which the specimen was broken, and a fourth, partly reamed through from both sides. Fig. *j* is half of a large, flat, tablet-like specimen, which was further broken by one of the workmen, who struck it in digging. The substance is a pinkish stone resembling the fibrous serpentine so common on certain parts of Staten Island. Neither specimen is particularly well made, nor has either any claim to a beautiful or ornamental appearance.

Of the thousand or more objects found in the Schley Avenue shellheap, few are net-sinkers and hammerstones. Most of the latter are pitless, being mere beach pebbles shaped in use by battering. A few were pitted on both sides to facilitate gripping with the hand. Some of the pitless stones were worn by grinding rather than by hammering. The net-sinkers were of the typical local

[1] Ancient Shell Heaps near New York City, *Anthropological Papers, American Museum of Natural History*, vol. III, p. 171.

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form—pebbles notched in two sides for attachment to the net. Two grooved stones, possibly small clubs or hammers, perhaps grooved sinkers, were obtained. These, as is usual here, had the grooves extending about the longer axis. One was found on the beach, at high tide. A number of the so-called notched sinkers seem to have been hafted and used as hammers, as is shown by their abraded ends.

The most abundant articles in all the heap, on the beach, and the surface, were arrowpoints, ordinarily made of local white quartz, obtained both from the native quarries in Westchester county and from beach pebbles. Others, of dark flint, red, yellow, green, and blue jasper, chalcedony, and argillite, were found.

The forms, as shown in pl. VI, *a–i'*, are manifold. Comment on the occurrence of the triangular points (*m–p*, *u–w*) has been made, and it may be added that the forms found vary somewhat from the true Iroquois type, being broader and more barbed. Some specimens have one barb longer than the other (*m*, *o*). It remains to be remarked again that our investigations corroborate the opinion that the double-ended type (pl. VI, *a–e*) is archaic,[1] and apparently did not survive until the beginning of Iroquois influence. Figs. *g'–l'* represent the elongate form, which was also common in the depths of the heap, but probably survived until the last occupancy.

Figs. *k'*, *n'–q'* show a group of the large points popularly called "spear-heads"; but there is reason to doubt the use of the spear by any of the Indians of New York state, as has been discussed by Beauchamp.[2] The fact is, spears are not mentioned by any of the contemporary writers on the local Indians. Nevertheless, some of the coarse, heavy forms found do not seem adapted to any other use.[3] Fig. *n'*, the largest flint found at Schley avenue, is composed

[1] Skinner, Alanson, Chronological Relations of Coastal Algonkian Culture, *Proceedings of the Nineteenth International Congress of Americanists*, Washington, December, 1915.

[2] Aboriginal Chipped Stone Implements of New York, *Bull. 16, New York State Museum*, p. 38.

[3] Since the above passage was written, the author has found a facsimile of a native drawing of an Indian bearing a spear in his hand, appended to the Hackensack and Tappan Indian deed for the sale of Staten Island to Hendrick Van der Cappellen in July, 1657. This may be found in Fernow's Documents Relating to the Colonial History of New York, o.s. vol. XIV, n.s. vol. III, p. 394.

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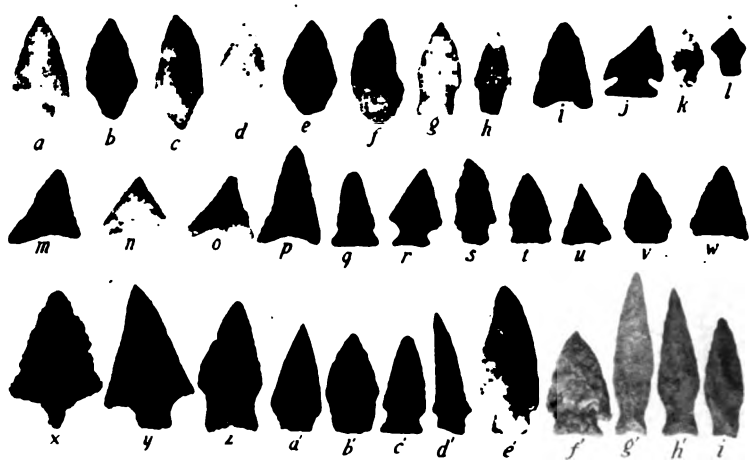

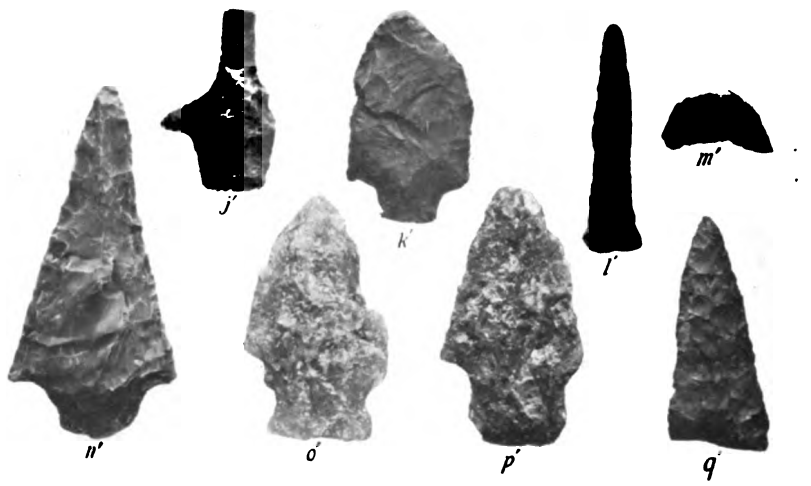

CHIPPED STONE IMPLEMENTS FROM THROGS NECK

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of a mottled gray and yellow chalcedony. It came from the undisturbed yellow soil under the deepest part of Deposit A. Fig. *o'* is of coarse, white quartz, and is unusual in that it has two notches in one side. The second or upper of these notches, moreover, has been made by pecking instead of being chipped. Fig. *q'* shows a thinly wrought fragment of a knife-blade of gray flint resembling the stone commonly used in central and western New York.

Figs. *j'*, *l'*, represent two drills, the only perfect specimens of this class obtained. Fig. *l'*, of dull-red jasper, is from the beach. Fig. *j'*, of green jasper, was found in the shellheap.

Fig. *m'*, a rare form in this locality, is a broken white quartz triangle that has been rechipped to make a serrated scraper. One or two serrated scrapers from Staten Island are in our collection, but otherwise they seem almost absent from New York sites except near the Niagara frontier.

OBJECTS OF SHELL

Shell objects are uncommon in this region, in spite of the fact that raw material was so abundant, and that all the early writers speak of the manufacture and use of wampum. Nevertheless, the writer has yet to see a single real wampum bead from any tidewater site that antedates extensive traffic with the whites. Those, principally from Long Island, that have come to his attention, date from well within Colonial times, and were found in graves containing also brass kettles, glass bottles and beads, and other trade articles in quantities. Occasional perforated olivella shells, a few small disc beads found with some of the former by Mr George H. Pepper at Tottenville, Staten Island, and the list from prehistoric sites is complete. Nevertheless, there is no reason to doubt that wampum of some kind was sometimes made in pre-Colonial times. At Glen Cove, Long Island, Mr M. R. Harrington found quantities of the cores of the columellæ of the periwinkle (*Buscyon carica* and *B. caniliculata*), "showing all the different steps in the manufacture of the white wampum, from the almost unworked shells to the ground and smoothed cylinders partly cut in lengths suitable

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for beads. A number of these were found bunched together with a white quartz flake and a small bone awl, as if they had been in a bag."[1] At Schley avenue, cache No. 2 contained a heap of twenty prepared conch columellæ, and similar deposits are not infrequent on many local sites. Ninety-four were found in a grave at Tottenville, and the writer collected thirty-five in a fireplace at Inwood, Manhattan Island.

At the extreme tip of Castle Hill neck, not far from Schley avenue, and within sight of the excavations later made on Clasons point, is a shellheap almost entirely composed of the débris of wampum making—thousands of periwinkle cores and vast numbers of roughly-squared fragments from the blue lip of the hard clam, used in making the "black" or purple wampum. However, a glass bead was found in this deposit, denoting contact with whites.

Van der Donck, writing in 1656,[2] says of wampum:

"That there should be no miserly desire for the costly metals among natives, few will believe: still it is true, the use of silver or any metallic coin is unknown among them. The currency which they use in their places to which they resort is called *wampum*, the making and preparing of which is free to all persons. The species are black and white, but the black is worth more by one half than the white. The black wampum is made from conch shells[3] which are to be taken from the sea, or which are cast ashore from the sea, twice a year. They strike off the thin parts of those shells and preserve the pillars or standards, which they grind smooth and even, and reduce the same according to their thickness, and drill a hole through every piece and string the same on strings, and afterwards sell their strings of wampum in that manner. This is the only article of moneyed medium among the natives, with which any traffic can be driven; and it is also common with us in purchasing necessaries and carrying on our trade; many thousand strings are exchanged every year for peltries near the sea shores where the wampum is only made, and where peltries are brought for sale."

Pl. IV, *n*, *o*, show two cups cut from the shell of the periwinkle. One was found near the surface of Deposit B, the other in Pit 38, one of the later pits. No specimens of this kind have ever before been reported from tidewater New York, but somewhat similar

[1] *Anthropological Papers of the American Museum of Natural History*, vol. III, p. 178.

[2] *New York Historical Collections*, n.s., vol. I, p. 206, New York, 1841.

[3] This is a slip of the pen, as the black or purple wampum was made from the lip of the hard clam (*Venus mercenaria*).—A. S.

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articles are known from the Iroquois country in this state and in Canada. Neither of the two specimens is made with metallic tools, both showing the laborious saw-cutting which characterizes the work of a stone knife. They form a new accession to the list of coastal Algonkian implements.

Pl. IV, *m*, represents a small disc bead of shell, washed from Deposit A and found on the beach. A few similar beads have been collected, notably at Tottenville, Staten Island, but they are rare. Nevertheless, they are found by thousands in the Iroquois territory, especially from the Niagara frontier westward into Ontario.

METAL OBJECTS

A bead of native copper, made from a small piece of the metal hammered flat and rolled into a little tube, was found by Mr Harrington in his excavations for the American Museum of Natural History, conducted in 1900. Nothing similar was obtained by our explorations.

A triangular arrowpoint (pl. IV, *l*), cut from the side of a worn-out brass kettle, in all probability, was found by our party in Deposit B, near the surface.

TRADE OBJECTS IN GENERAL

In addition to the brass arrowpoint noted above, several other trade objects, presumably of Dutch origin, were found. These consist of a blue glass trade bead, several gun-flints, and round leaden bullets of small caliber, including a buckshot. Stems of trade pipes of white clay, bits of china, and bottle glass also occurred, but whether all are attributable to the later Indians is doubtful.

POTTERY

The pottery from the Schley Avenue shellheap is inferior, on the whole, but that of the later pits, on the edge of the upland, is of rather good quality. The shellheap potsherds, except a few from the topmost layers, are all Algonkian of archaic type, and so badly disintegrated, when possessed of any character or markings, as to be without interest for the purpose of illustration.

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A portion of the rim of a large and more graceful Algonkian jar was found in Pit 1, one of the later group. This vessel was constricted slightly at the shoulder, but the rim flares outward a little at the edge. It is decorated about the neck with encircling, parallel bands of dots impressed with a roulette, and with short, slanting lines of the same character inside the edge of the rim. Its color is light reddish brown.

Pl. VII, *a*, represents the smaller of two sub-Iroquois vessels found in later pits (Nos. 2 and 5); it is 12 in. high, 9¾ in. in greatest diameter, and measures 7¼ in. across at the mouth. This jar, which is of mottled chocolate-colored ware, is somewhat heavier and more clumsily modeled than the similar pot from Leland avenue figured in pl. XII, *a*. On the other hand, it is more elaborately decorated, and is more Iroquois in style, since it has the customary four peaks on the rim. The rim is banded with three parallel rows stamped with a stick wrapped with fine thread, and bordered at top and bottom by short, vertical lines applied with the same instrument. The space under the four peaks is occupied, in two cases, by a checker design, made in the same way; in the case of the third, the horizontal lines do not cross the two vertical center ones. The design is chipped away from the fourth peak. Some attempt has been made to ornament the neck under the rim with crude chevron patterns scratched in some cases with the thumb-nail or a flint chip, or perhaps with a keen bone awl, in others with a blunter object, as a bone or a wood sliver. These chevrons are cross-hatched in several instances. The vessel's capacity is perhaps a gallon and a half.

Pl. VII, *b*, is an unusually large vessel of sub-Iroquois style. It is larger than the last, being 13½ in. high, 12 in. in maximum diameter, and 9⅞ in. at the mouth. Its capacity is about two and a half gallons. The material is the usual tempered clay, mottled yellow and black. The vessel is heavy and not graceful. The entire body of the jar is fabric-marked outside, and the scores of the scraping tool are still visible within, which is not true of the preceding specimen. On one side a series of holes made with a stone drill, and facing each other, show that the vessel had met

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a

b

POTTERY VESSELS OF SUB-IROQUOIS TYPE, THROGS NECK

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with an accident in Indian times, and, even though it was cracked or broken, it was still of sufficient value to the natives to warrant their mending the vessel by boring and lacing the break together with a thong.

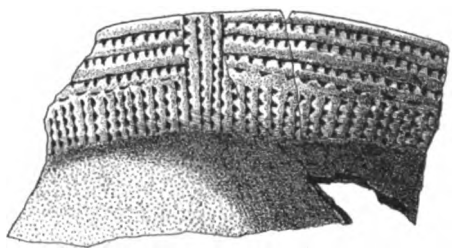

FIG. 2.—Sherd from the rim of a sub-Iroquois vessel, decorated with impressions made with the back edge of a scallop-shell.

FIG. 3.—Portion of rim of a small Iroquois jar with conventional face at the angle.

Fig. 2 represents a sherd from the rim of a sub-Iroquois vessel, and fig. 3 a truly Iroquois rim sherd of Mohawk-Onondaga style. The latter exhibits only part of the decorated portion of a small vessel with narrowed neck, the lower angle of the collar being notched. The rim decoration consists of lines incised in oblique chevron groups. The jar originally had a quadrangular mouth, and on the two angles remaining are conventionalized human faces. The angle forms the nose, the eyes and mouth being oval depressions that had been stamped in the moist clay. There is a row of dots around the inner angle of the lip of this jar. It is glistening black within, while the outside has received a wash or sizing of fine pinkish clay, a potter's device apparent in only the best of the later vessels of the Iroquois contact period.

This type of decoration bearing conventional human faces indicates distinctly post-Iroquois contact, and probably well within the Colonial period. Other examples are on record from Van Cortlandt Park, Kingsbridge, and Inwood,[1] and the writer has obtained examples at the old Mahikan site at Castleton, near Albany, on all of which sites post-Colonial objects occur. A

[1] Skinner, Archæology of Manhattan Island, *Anthropological Papers, American Museum of Natural History*, vol. III, pp. 116, 120.

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somewhat similar figure is seen on a large jar in the Museum of the American Indian, Heye Foundation, obtained at Shelter island, Long Island, while other specimens were found at the great Munsee Indian cemetery at Montague, New Jersey, by Messrs Heye and Pepper.[1] Throughout the Mohawk-Onondaga territory this design is old and well established, and has been described also from Hochelaga, at Montreal. The writer obtained abundant specimens for our collections from a site at St Lawrence, Jefferson county, New York.

Just how these pronounced Iroquois forms came to be introduced among the tidewater Algonkians of New York is not difficult to judge. As has been mentioned, doubtless the first ideas filtered down the Hudson from the Mahikan and their dependents, who were in contact with the Mohawk. Later, the Mohawk, having become powerful, and possessing guns obtained from the whites, overthrew all their Algonkian neighbors, and raided, so says history, all tidewater New York, even subjugating the tribes of eastern Long Island. It is probable that prisoners held in the Mohawk valley returned with new ideas. The Mohawk were not accustomed to carry their women on their raids, and their warriors were never potters.

CONCLUSIONS

Analysis of the specimens found in Deposit A, segregated according to our arbitrary ruling, shows that the so-called "lozenge-shaped" arrowpoints (pl. VI, *a–e*) were indeed archaic, being abundant at the greater depths, but disappearing as the topmost layer was reached. A long, narrow-stemmed form (figs. *g′–i′*) was equally old, but was still in use when the first white settlers arrived. As for the triangular point, only two were found lower than the surface layer of the entire heap, although eleven came from close to the top, and several were found in the later pits.

Scarcely any pottery was found at the bottom of the shellheap, and the scanty sherds from the center are of very coarse, poorly fired ware. Enough fragments were secured to show that these

[1] *Contributions from the Museum of the American Indian, Heye Foundation*, vol. II, no. I, pl. xxii *b*, xxiii *b*.

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vessels were of the pointed-bottom, archaic, Algonkian style, made of a crumbly red clay, heavily tempered with coarse sand. In the middle section of the heap, objects of stone, previously of good workmanship, especially in the lowest part, lapsed somewhat, and more bone and antler implements came into vogue, though these are poor and ill-fashioned.

A difference was noted between artifacts found in the surface soil and the first few inches of shells, and those from all the rest of the deposit. Here were triangular arrowpoints of flint, fragments of well-made pottery of Iroquois form, including even the deep-notched angle, quadrangular rim, and conventional human face of well-known Mohawk type. In the pits belonging to this period, some of which occurred also on the edge of the upland, slightly removed from the ancient dump-holes, were jars of sub-Iroquois style, triangular arrowheads, polished bone implements showing careful workmanship, and shell cups. Near the surface, too, our labors disclosed a glass bead, a brass arrowpoint, bullets, gun-flints, stems of trade pipes, and other objects of the early Colonial barter period.

Although primarily a shellheap site, pits dug by the Indians occurred to the number of forty-two. Of these, about a dozen (indicated by a special symbol on the map) were of relatively modern date, being probably post-European, and belonged to the small settlement of Siwanoy Indians who seem to have camped on their old ground after an absence of some years. To these people may also be attributed Iroquois and late sub-Iroquois remains and Indian trade articles, scattered sparsely here and there over the top of the shell deposits.

Most of these modern pits occurred on the edge of the upland where the principal burials were found, with the exception of a few (Pits 27, 28, and 30, in particular) which were in the hollow. Besides the difference in the nature of their contents, these later pits contained far more specimens than the ancient ones, and the condition of the shells in them was different, for they were fresh and hard in appearance, still retaining their sharp edges, and not being broken and crumbling to lime like the shells in the ancient pits.

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These pits, Nos. 1 to 8 and 42 on the upland, and Nos. 27, 28, 30, and 31 in the hollow, contained six human skeletons and a dog burial, the latter being a custom apparently not in vogue in older times. In addition, these thirteen pits were fairly rich in relics, ten having specimens, of which seven contained bone implements to the number of ten, two had stone objects, one a shell cup, and nine pottery, including two restorable vessels of sub-Iroquois style. About a quarter of a mile north, on the upland, Mr Harrington opened several pits a number of years ago, finding two dog burials in a stone cist at the bottom of one.[1] These remains seem also to have been of the later period.

Of the thirty-nine ancient pits in and near the shell deposits, ten contained no artifacts or bones of any description. None had bone implements, eleven held potsherds, generally merely a handful of crumbling clay not worth saving, often no more than one or two small bits. One had a plain quahog shell used to hold red paint, but unworked in any way. Five held stone objects, including six arrowpoints, all stemmed, and two contained hammerstones. In Pit 26, the most interesting ancient pit opened, were found a notched maul and a grooved axe. A poor people, these old pit-diggers, judged in the light of their successors.

Two caches were found, the first made up of four stemmed arrowheads, the second a little hole in which had been carefully piled twenty columellæ or inner whorls of the periwinkle, ready to be ground into polished cylinders and cut and perforated to make white wampum beads.

Evidently the Schley Avenue shellheap marks a place long favored for summer residence by the local Indians, particularly the Siwanoy, or rather their ancestors. In succeeding years an accumulation of débris from their summer shell-fishing industry grew to a depth, in some parts of Deposit A, of four to five feet. During this occupancy no great change came into the life of the natives. They learned to make crude pottery, an art almost if not quite unknown to them when the first wandering hunters arrived. They

[1] Harrington, M. R., *Anthropological Papers of the American Museum of Natural History*, vol. III, p. 176.

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commenced to favor bone and antler as material for their tools. Their stonework was always well advanced; they knew first the grooved, then the perforated, banner-stone, the two or multiple-holed gorget, the stone pipe, the grooved axe, and a crude celt made of a sharpened pebble, with many forms of stemmed and notched projectile points and blades.

Then for some unknown reason there came a time, perhaps not for long, when the spot was deserted, and when the inhabitants returned they had undergone a considerable change. They were cognizant of other peoples than themselves, and their immediate and closely allied neighbors. A new power had arisen in the north. An alien people of higher culture had shown them how to make better pottery and bone tools, and had caused them to abandon many of their laboriously and skilfully wrought implements and ornaments of stone for a few simple types. The name Mohawk, while synonymous with dread, still compelled admiration. Nor was this all. Scarcely had this new stimulus become felt when the first white colonists arrived, and very soon their more durable utensils and implements commenced to supersede those of native make. Glass beads, brass arrowheads, cheap white-clay pipes, and guns drove out the shell beads, the flints, the native pipes, and the bows and arrows of the Indians.

It was just before the final transition that the Siwanoy returned to the Throgs Neck site, well equipped with the best that local savage art could produce, and supplied with the new creations of the whites. Their last stay was brief, as witness the relative paucity of remains. Only a few pits and graves, though fairly prolific in specimens, were found, for the epoch of racial jealousy, culminating in decimating wars, was at hand, and the Siwanoy were destined to drop from power to oblivion.

Judging by the kind and quantity of the trade articles we may place the date of the last native occupancy of pure culture at Schley avenue at approximately 1550 to 1575, since it antedated the first Iroquois influence. Its first occupancy may have preceded this time by as much as five hundred years; but this, of course, is conjecture. While the bottom portion of the shellheap is probably

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as old as any site in tidewater New York, none in this region, so far as reported, possesses any remote antiquity. The return of the Indians after their absence may be judged to be well within the Dutch Colonial epoch, perhaps in 1643, when the war caused by Kieft's massacre of the local tribes was raging. At this time all the tidewater peoples were unsettled and shifting, hence the stay of the Siwanoy was brief, possibly not covering any of the period after the war. The pits and later layers indicate no extended occupancy, nor are there late Colonial relics, such as tomahawks of iron, bottles, or glazed earthenware. Probably by the time these were common, the Indians had removed to Pelham bay, where they are known to have been in numbers about this period. The possibility of their having been resident at a spot not far away, during their absence from the Throgs Neck site, will be discussed in another part of this paper.

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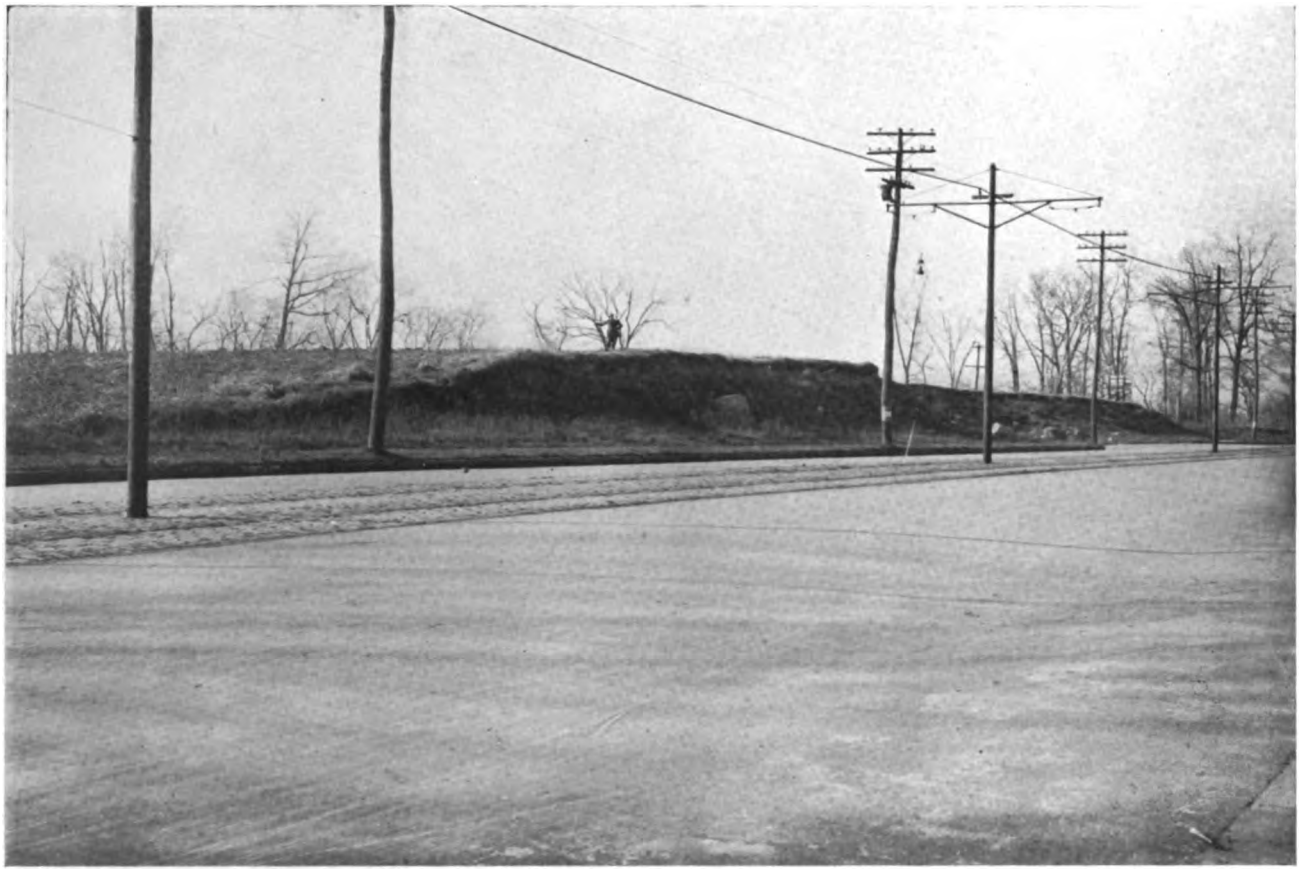

SITE OF THE EARLY HISTORIC SIWANOY INDIAN VILLAGE OF SNAKAPINS ON THE KNOLL AT SOUND VIEW AND LELAND AVENUES, CLASONS POINT

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II.—SNAKAPINS, A SIWANOY SITE AT CLASONS POINT

HISTORICAL INTRODUCTION

By Reginald Pelham Bolton

Member of the New York Historical Society

The modern Clason, or Clasons, point is usually known by its pleasure resort, situated at its eastern extremity, and the crowds of summer visitors who frequent the place have little concern in the historical character of the locality, and perhaps as small an interest in the picturesque views of marshland and rolling meadow which can be had from the trolley on the Clasons Point road, now renamed Sound View avenue.

The tract is a long promontory stretching a mile and a half from Westchester avenue to the blue waters of Long Island sound, with a width of but a few hundred yards at any part (pl. IX). Part of its ancient physical boundaries remain at this date, being Bronx river on the west side, and the winding rivulets known as Pugsleys and Wilkins creeks on the east. Its northern limit was a line drawn between the head of Wilkins creek and that of Barretts creek which extended from the Bronx river at the "Black Rock" in an easterly direction.

This tract, admirably adapted to native existence, was known to the Indians of the locality as "Snakapins," [1] and its recent exploration, conducted by the Museum of the American Indian, Heye Foundation, proves that their occupancy of the place was a permanent one. The village-site which has been discovered and explored, affording evidences of long-continued residence, is the knoll of sandy ground, sloping to the south, situated on the western side of the old Clasons Point road, now Sound View avenue, at its

[1] Beauchamp, in his Aboriginal Place Names of New York (*Bulletin 108, N. Y. State Museum*, p. 254–5), quotes Tooker to the effect that the name *Snakapins* is perhaps derived from *sagapin*, a ground nut. This, with a diminutive termination, may well be correct.

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intersection with Lacombe avenue and the projected Leland avenue.

The history of the locality is not without tragic interest. In 1643 there arrived in the locality one Thomas Cornell[1] who, perceiving the advantages of the neck, proceeded to make himself at home upon the extreme point, and established himself in a dwelling there with some members of his family. He claimed to have acquired the right to this settlement from the natives, doubtless then resident within half a mile of the point. His settlement was untimely, for it nearly coincided with the culmination of the Indian resentment of the white men's intrusion, and of their revenge for their brutal slaughter of the Wecquaeskeck who had fled before the Mohawk to New Amsterdam. On October 6 of the year named, the warriors of all the tribes near Manhattan attacked the colonists and destroyed every settlement to the gates of Fort Amsterdam.

Among those who fell victims were Ann Hutchinson and her family, on Ann's hoeck or neck, the later Pelham neck, and also the family of Thomas Cornell. His house, probably a temporary structure, was burned, his goods destroyed, and his cattle slaughtered. Cornell himself escaped on a vessel which fortunately rescued him at the most critical moment, and with characteristic tenacity he clung to his quasi-title, and, returning to the property, secured from Governor Kieft, on July 26, 1646, a "ground-brief" for Cornells neck, without other consideration than the obligation to acknowledge Dutch sovereignty over the land.

The village had near neighbors on Castle Hill point, or neck, which is within sight of Snakapins, across the meadow land through which Pugsleys creek meanders, separating the little promontory known as Screvens, or Wilkins, point. The conspicuous headland of Castle hill, later known as Cromwells neck, rises sixty feet above tidewater, and upon it Adrian Block, sailing by in 1614, saw the large wigwams of the tribe. These neighbors are said by Robert Bolton to have been Siwanoy, and it would seem probable that they, as well as the occupants of Snakapins, of Pelham

[1] Thomas Cornell was a native of the county of Essex, England, who migrated to Rhode Island, thence came to Westchester with Roger Williams and John Throckmorton, the latter of whom settled on the neck of land known as Throgs neck.

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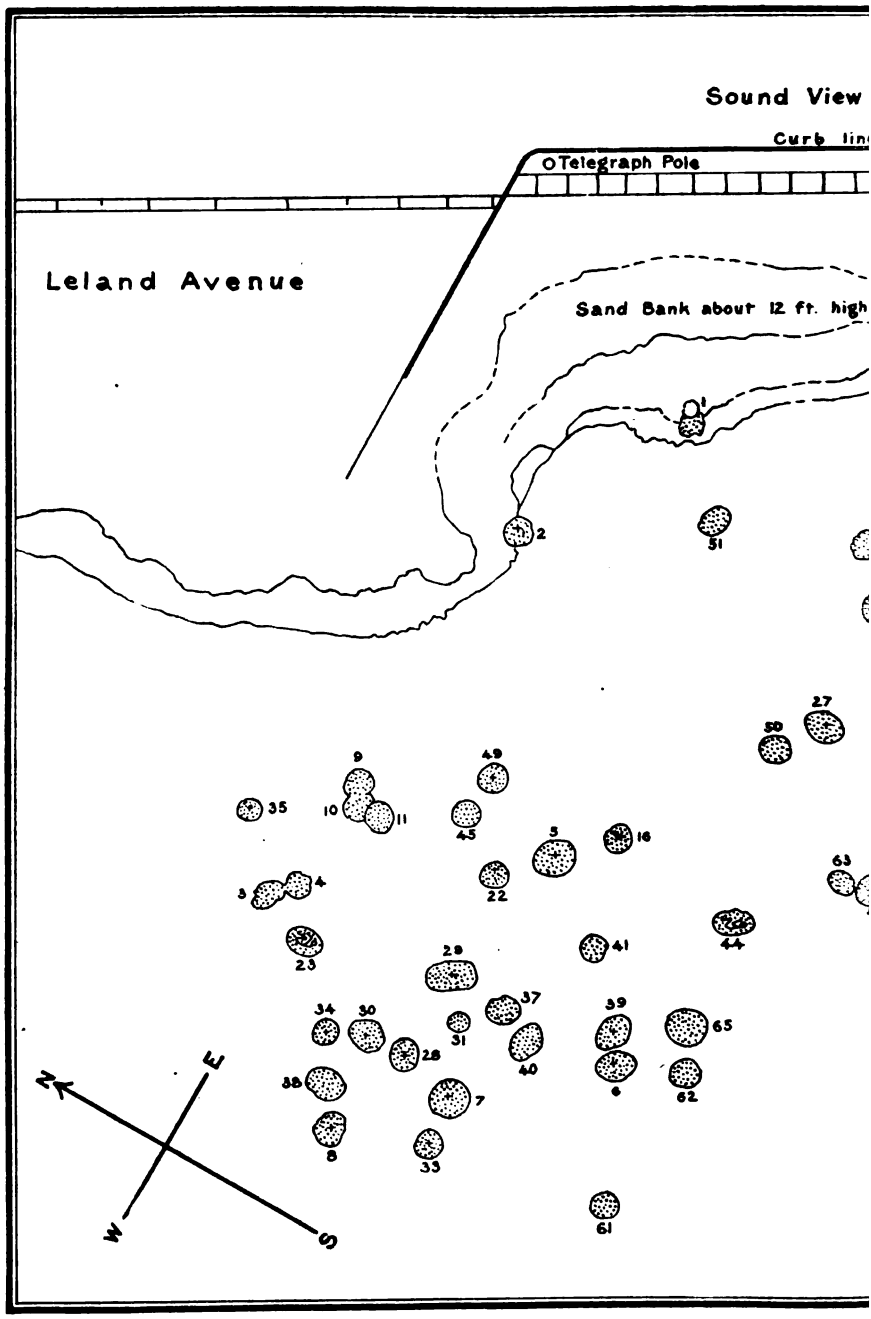

SITE OF THE SIWANOY INDIAN VILLAGE OF SNAKAPINS AT C

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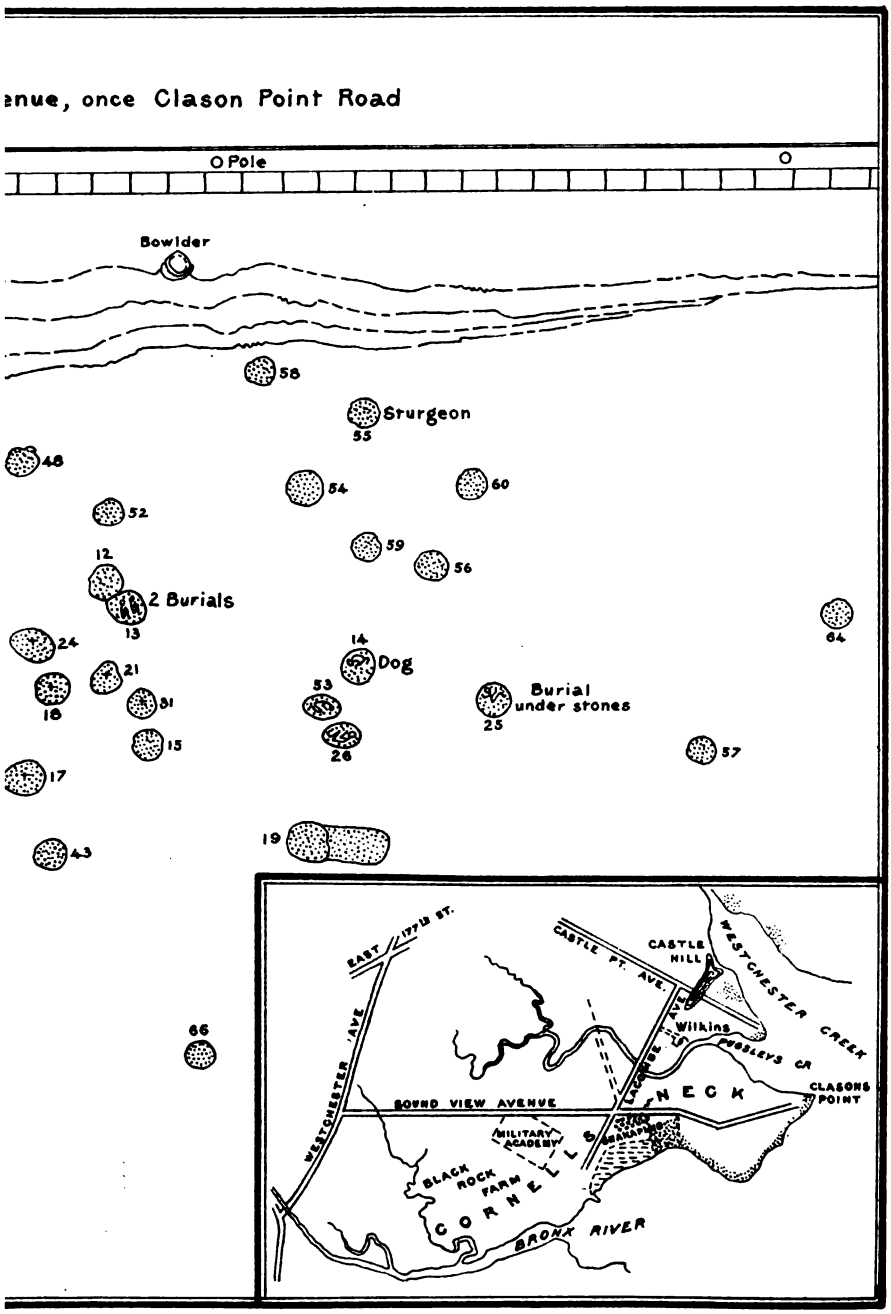

NS POINT, FROM THE SURVEY BY REGINALD PELHAM BOLTON

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neck, and other local settlements, such as that of Throgs neck, were of this tribe. When in 1692 the trustees of the town of Westchester secured a deed covering the entire tract from the Bronx river to Pelham, the agreement was made by local sachems, one of whom was the famous Wampage, alias "Ann Hook," resident on Pelham neck, and reported to have been the native who actually killed Ann Hutchinson, and who thereafter, in accord with an Indian custom, adopted her name as his own.

Meantime, Thomas Pell, arriving at Pelham in 1654, made a separate bargain with Wampage and his associates under the famous oak tree, by which he acquired a dubious title to the Westchester district, including Cornells neck. In 1664 he laid claim to this property, when Sarah, the daughter of Cornell (who was by that time deceased), then the wife of Charles Bridges of Flushing, took the claim into court and proved her superior title to the property, not only by Kieft's ground-brief of 1643, but by a later confirmation by Governor Stuyvesant, who had made a new bargain with the Indians for the purpose of establishing the ownership.

Pell's claim was thrown out of court, and a patent was issued by Governor Robert Nicolls in 1667, confirming the title of Cornells neck to William Willett, the son of Sarah Cornell by her former husband, Thomas Willett.

Willett built a home on Cornells neck, which existed till modern times, but fell into ruin after about two hundred years of existence, some part of its original construction being preserved in the present Clasons Point Inn.

In 1692 the trustees of the freehold and commonalty of the town of Westchester secured the deed, previously referred to, from the local Indians still residing in the locality covering the entire tract between the Bronx and Hutchinson rivers, comprising the area of the present Westchester and Unionport, and necessarily the area of Cornell's neck. This was a sort of quit-claim deed, designed to extinguish any further claim by the natives to any part of the town, and it included "all the land which we, the said Maminipoe and Wampage lay claim to," a territory of several square miles, the consideration for which was the usual paltry collection of objects

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of small value with which these poor aborigines were commonly cheated out of their homes and home-lands. In this deed it was:

"2 gunns 2 adzes
2 kettles 2 shirts
2 coats 1 barrel of cider 6 bitts of money."

The bill of expense for these items includes six shillings for the Indians' expenses, three shillings for their supper on the occasion of signing the deed, and a total expense of £8, 4*s*, 6*d*, or about forty-one dollars for the goods named above.

The four chieftains who signed this deed were Wampage, alias Ann-hook, and Maminipoe, with others known as Crohamathense and Mamertekoh, one of whom may have been resident of Snakapins village, since its area was included in the deeds. The native witnesses to the deed were five in number, namely, Weenetonah, Tanancot, Coshehoa, Rauh Couwind, and an Indian having the adopted name of Tom, probably the interpreter.

The later history of the neck affords no indication of what disposal was made of the natives, though we learn from the church records that Indians attended the Episcopal church in Westchester as late as 1710, and that they were of good behavior during the services.

The later ownership of the Cornell Neck property was as follows:

Thomas Willett of Flushing, son of Thomas Willett of New York City, in 1709 conveyed to his son, William Willett, "all that certaine parcell of land, contained within a neck, commonly called and known by the name of *Cornell's Neck*, bounded on the west by a certain rivulet that runs to the black rock and so into Bronx River," etc.

REGINALD PELHAM BOLTON.

THE SITE

The Clasons Point site is one of a kind termed by local archeologists a "pit site," that is, all the artifacts recovered were concealed in pits made by the Indians for various purposes, as we shall

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presently relate. The wash of three centuries, the accumulation first of forest mold and then of fertilizer and top-dressing, when the land was put under cultivation, had effectually concealed all traces of Indian occupancy. Surface hunting revealed almost nothing, and the site might have remained unknown had not the writer been so fortunate as to note the shells in the eroded bank.

The nearest shellheaps lie on the eastern side of the point, not more than two hundred yards away, and extend thence to the tip. Those farther away, however, seem to be of an earlier character than the Leland Avenue heaps, for notched and stemmed arrowpoints, crude Algonkian pottery, and grooved axes are reported from them. Several skeletons, supposedly Indian, were unearthed when some of the attractions at the "Park," which now occupies the point, were constructed.

THE PITS AND THEIR CONTENTS

Pit 1: Bowl shaped, 3 ft. in diameter by 3 ft. deep. It contained many giant oyster-shells, among which were found the stem and a portion of the bowl of a nearly straight pipe of plain, brown earthenware. A few sherds of indeterminate pottery were recovered.

Pit 2: A large pit of bowl shape, 4 ft. in diameter by 3 ft. 6 in. deep, containing clam, oyster, and cockle shells, large sherds of sub-Iroquois pottery, a bone arrowpoint, and a triangular point of flint.

Pit 3: Bowl-shaped, 3 ft. in diameter by 3 ft. deep; a circle of fire-stones at the bottom. Contents: the usual shells; a few rim sherds of sub-Iroquois pottery; a small, highly polished celt of dark stone (pl. XI, *g*), and bits of the shell of a painted tortoise. The periphery of this pit touched that of Pit 4 at the south.

Pit 4: This bowl-shaped pit was of approximately the same size as Pit 3 and contained a close-packed mass of mussel-shells, with a layer of quahogs, or hard clams, at the bottom. In the shells were found crab and lobster claws, charred walnuts, the shell of a painted or spotted turtle, with the skeleton and skull complete. About half of a small sub-Iroquois vessel was recovered, crushed

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flat near one side of the pit, about 6 in. from the surface, where a plowshare had also struck it. Beneath this was a bone fish-hook (pl. x, *d*), and in the pit in general several bone awls were found.

Pit 5: This was a very large pit of the bowl type, 7 ft. in diameter by 6 ft. 6 in. deep. At the bottom was found a circle of fire-stones in situ. The shells were sparse in this pit, except that, on its western side, about midway and some 3 ft. down, was a mass of mussel-shells of two species, about 1 ft. thick and 3 ft. across. A few other shells and sherds of a small Iroquois vessel were scattered throughout this great pit from top to bottom. At the extreme base, in the northeastern corner, two human toe- or finger-bones were found. In the mussel-shells a fine, hollowed, antler-tip arrowhead (fig. 4, *a*), a bone awl, a triangular arrowpoint of dark flint with a deeply notched base (pl. xi, *a*), and two crude, notched net-sinkers were encountered. The usual deer-, bird-, and fish-bones, as well as scallop, and hard and soft clam shells, were also found. A fragment of the stem of a Dutch trade pipe of white clay also came from this pit.

Pit 6: This was a medium large, oval pit, 4 ft. long, 3 ft. wide, by 3 ft. deep. It held the usual shells, mammal-, bird-, and fish-bones, and bits of turtle-shell, some of which were identifiable as belonging to the snapping turtle. A large fragment of the rim of a fine sub-Iroquois vessel with a raised ornament like a conventional double handle (fig. 10, *d*); five bone awls, one notched and polished, with tally marks cut on the handle, one perhaps made of a fish's jaw; a large club or sinker with opposite edges notched, and a poor hammerstone without pits, were obtained. This pit also held a number of crab and lobster claws, calcined.

Pit 7: Large, somewhat conical in cross-section, 6 ft. across by 4 ft. 6 in. deep. This pit contained shells at the top under a layer of blackened earth; next a layer of clean sand, 2 ft. thick; then more shells, and, at the bottom, a number of large bowlders. The fresh sand had probably been thrown in to cover the foul-smelling shells first cast in the pit. The contents of this deposit were two cut bones, a notched bone awl (pl. x, *l*), a broken black clay pipe, and sherds from several jars, one of which was Algonkian, the others

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Iroquois. One of the latter was very small, perhaps a toy. There were many bird- and turtle-bones.

Pit 8: A shallow, dish-shaped pit, 3 ft. across by 18 in. deep, which contained shells, a few plain potsherds, and a hammerstone.

Pit 9: A large pit touching Pit 10 on the west; bowl-shaped, 5 ft. in diameter by 4 ft. deep. It contained sherds, a very long and well-made bone awl (pl. x, *j*), several hammerstones, a triangular arrowpoint, but few shells.

Pit 10: This pit formed a figure eight with Pit 9; it was 3 ft. broad by 4 ft. deep, and contained nothing but dark earth.

Pit 11: A more recent pit dug into the top of Pit 10 and cutting it on the south. It was dish-shaped, 4 ft. broad by 18 in. deep, was crammed with burnt mussels, and held several bone awls, nine net-sinkers, and some sub-Iroquois sherds of good quality.

Pit 12: This pit, which encountered Pit 13 on the south, was of bowl shape, 3 ft. in diameter by 2 ft. 6 in. deep, and contained only huge oyster-shells. A large stone of perhaps a hundred pounds' weight separated this pit from No. 13.

Pit 13: The outlines of this pit were indeterminate, but at a depth of two feet two badly decayed and plow-struck skeletons of adult males were found encased in fresh sand. The southerly skeleton was that of a middle-aged man; the other was much younger. These were tightly flexed, that is, their knees were drawn up and their arms bent, with hands in front of the faces. Each lay on the left side, headed northeast and facing southeast. A stemmed arrowpoint of dark stone (pl. xi, *f*) lay beside the knees of the elder, and six inches beneath them was a thin layer of shells. The heads of both were but a few inches from the large stone in connection with Pit 12.

Pit 14 A: Bowl-shaped, 3 ft. across by 2 ft. deep, containing oyster- and clam-shells, but no artifacts. At the northeast this pit connected with the following.

Pit 14 B: A large, bowl-shaped pit, 4 ft. in diameter by 4 ft. deep. In the center, about two feet down, in a core of clean sand, was a portion of a dog's skeleton, directed northwest, as though once complete, but the skull and hindquarters alone remained.

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Beneath the dog lay some sherds of a small jar of sub-Iroquois type.

Pit 15: A dish-shaped pit, 3 ft. across by 18 in. deep. It contained burnt shells, but no artifacts.

Pit 16: Bowl-shaped, 3 ft. in diameter by 3 ft. deep. Contents: shells and a few sherds.

Pit 17: An oval or washboiler-shaped pit, 4 ft. by 6 ft. in diameter by 2½ ft. deep. This held scallop-shells and a few sherds.

Pit 18: Bowl-shaped, 4 ft. across and 3 ft. deep. Contents: oyster- and scallop-shells, and a few good sherds from at least two sub-Iroquois jars.

Pit 19: Large, bowl-shaped, 6 ft. in diameter by 5 ft. deep. This pit intruded into a rectangular extension at the south that measured 10 ft. long by 4 ft. broad, and may have been the remains of a semisubterranean storehouse of the type used by the Shinnecock of Long Island well within historic times; in fact, the writer observed several in use in 1902. At the northern end, where this extension touched the pit, were the remains of oak posts in the two corners, and traces of another at the southeastern angle. The pit and storehouse contained few shells, but a triangular arrowpoint, a few sherds, a fragment of an Indian pottery pipe-bowl with line decoration (pl. XI, *h*), and a piece of the stem of a Dutch white-clay trade pipe were found.

Pit 20: A bowl-shaped pit, 3 ft. in diameter by 2 ft. deep, which contained only gigantic oyster-shells.

Pit 21: A small pocket, 2 ft. in diameter by 8 in. deep. No objects save shells.

Pit 22: A barrel-shaped pit, 3 ft. in diameter by 3 ft. 6 in. deep. It held only scallop, mussel, and soft clam shells, all dry and well preserved; a net-sinker; a hammerstone; bits of two sub-Iroquois jars. Old fishermen say that the scallop, now regarded as extinct in these parts, occurred in great numbers in some years, and that such pits probably represent feasts when scallops could be gathered in abundance.

Pit 23: This pit was 4 ft. long by 3 ft. 6 in. deep, and was oval, being 3 ft. broad. In disturbed and discolored sand, at a depth of two feet, was found the closely-flexed skeleton of an aged and nearly

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toothless male. It lay on the right side, headed southwestward, with the face southeast. The neck was twisted so that the top of the skull was uppermost. No objects accompanied the body. About two inches beneath the skeleton was a layer of light, clean sand, a foot thick, and under this a layer of black earth and sand with some shells, among which was a piece of bone that had been cut in two with a stone knife. The body seemed to have been interred in a refuse pit, the original offal having been raked to one side and fresh sand thrown in, upon which the skeleton rested.

Pit 24: Of washboiler shape, 5 ft. long by 3 ft. broad by 4 ft. deep. A few shells of large oysters and some sherds.

Pit 25: At a depth of one foot from the surface this pit contained the skeleton of a man lying probably flexed on its back, the knees raised and reaching to within four inches of the surface, where the plow had carried them and the bones of the lower legs and feet away. The trunk and head were covered by a heap of bowlders weighing from five to fifty pounds, one of the largest lying on the skull, which, of course, was crushed. The arms had been raised toward the surface and perhaps doubled before the face, but were plowed away. The skeleton was headed southeast, facing east, as the head was turned to one side. Oyster-shells were found in small pockets among the stones. The shape of the grave was indeterminate.

Pit 26: In sand, which did not give a well-defined pit outline, a slightly flexed man's skeleton was found at a depth of ten inches. The body, which had been headed due east, lay on the right side, facing north. In addition to being badly decayed, the bones had been struck by a plow. The arms were extended at the sides, instead of being doubled before the face as usual. A few oyster-shells were scattered through the grave, but no artifacts were placed with the dead. In the grave refuse were a beef-bone, sawed with a white man's metal saw, and the mouth-piece of a Dutch white-clay trade pipe. In the southwestern corner of the grave was a small, bowl-shaped pocket of oyster-shells, 18 in. across by 1 ft. deep.

Pit 27: A washboiler or oval-shaped pit, 4 ft. long by 2 ft. broad by 2 ft. deep. Black earth and a few oyster-shells with a

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hollowed, barbed, bone harpoon socket, were the only contents. This pit seemed to be a grave from which a body or its skeleton had been removed in ancient times.

Pit 28: Barrel-shaped pit, 3 ft. in diameter by 3 ft. deep. The contents consisted of shells, two bone awls, one being made of a sliver of hollow bird-bone (pl. x, *f*), the other of deer-bone, well-made and polished; also a few Algonkian potsherds.

Pit 29: Oval, 7 ft. long by 5 ft. broad by 3 ft. 6 in. deep. It held a few sherds, and the tip of the mouth-piece of an Indian clay pipe. The longer axis of this pit was north and south.

Pit 30: An oval pit, 5 ft. long by 4 ft. broad by 4 ft. deep. It contained a large number of sherds of two vessels, one of true Iroquois, the other of sub-Iroquois type; a net-sinker, and one broken triangular point of flint. The longer axis was north and south.

Pit 31: A bowl-shaped pit, 3 ft. in diameter by 3 ft. deep, which held shells of the hard clam only.

Pit 32: A shallow, dish-shaped pit, 3 ft. in diameter by 8 in. deep. Contents: shells, charcoal, and most of the sherds of a small, sub-Iroquois jar, badly broken by plowing (pl. xii, *a*).

Pit 33: Bowl-shaped, 3 ft. across by 2 ft. deep, containing principally soft-clam shells. A fine notched bone awl (fig. 4, *b*), large sherds, and a buck's antler were found.

Pit 34: Dish-shaped, 3 ft. in diameter by 1 ft. deep, with much Iroquois pottery in fragments and a single unrelated sherd.

Pit 35: Dish form, 3 ft. in diameter by 6 in. deep, with large oyster-shells but no artifacts.

Pit 36: A barrel-shaped pit, 3½ ft. in diameter and of the same depth. The contents consisted mostly of ashes and charcoal, with a stone-walled hearth at the bottom. The artifacts found were a bird-bone awl, a few sherds, and a deer antler.

Pit 37: A barrel-shaped pit, 3 ft. 6 in. in diameter by 4 ft. in depth; it held many oyster- and clam-shells, and a large stone hearth halfway down. Contents: some sub-Iroquois sherds, a net-sinker, two bone awls, and a cut bone. Crab- and lobster-claws, and deer- and fowl-bones also abounded.

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Pit 38 A, B: *A* was barrel-shaped, 3 ft. in diameter by 4½ ft. deep, packed nearly solid with cockle-shells, among which were a sinker, together with some bones and sherds. *B* was a shallow, dish-shaped pit of later origin, dug into the top of *A* on the east, 3½ ft. in diameter by 1 ft. deep. There were hard-clam shells on the bottom, the rest of the refuse being two species of mussels, mostly of the gray variety. One rim sherd from a pottery vessel was found.

Pit 39: An oval pit, the longer axis east and west, 3 ft. long by 2½ ft. broad and 18 in. deep. A notched, double-ended bone awl (pl. x, *m*), one plain bone awl, a few sherds, and some turtle-bones were found.

Pit 40: Oval, 8 ft. east and west, 5 ft. broad by 5 ft. deep. It held eleven net-sinkers, fragments of two sub-Iroquois jars, a chipped bit of flint, and some sturgeon plates.

Pit 41: An oval pit, 6 ft. east and west, 3 ft. broad, and 4½ ft. deep. Pieces of a large sub-Iroquois jar, a triangular flint reject, a piece of box-tortoise shell cut off in cup making, and calcined shells were among the contents.

Pit 42: A dish-shaped pit, 3 ft. in diameter by 10 in. deep, in which was a circle of hearth-stones filled in with huge oyster-shells. There were no relics.

Pit 43: Of the usual bowl-shape, but shallow, 4 ft. broad, 20 in. deep, and containing only great oyster-shells.

Pit 44: Barrel-shaped, 4 ft. deep by 4 ft. in diameter. Near the surface, large oyster-shells, then discolored sand, and at a depth of three feet the skeleton of a large man, on right side, flexed and headed southeast, facing east (see pl. xiv). Near the knees lay a fine bone batten or knife (fig. 6), with incisions round the edges, and near the feet a good bone awl (pl. x, *o*). Beneath the hands lay a rim sherd of a small, sub-Iroquois jar. About six inches under the body lay a thick bed of calcined mussel- and oyster-shells in which were a few potsherds.

Pit 45: A bowl pit, 2 ft. 6 in. deep and 4 ft. broad, containing the columella of a conch, a net-sinker, fragments of a tortoise-shell cup, and some sub-Iroquois sherds.

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Pit 46: Bowl-shaped, 4 ft. 6 in. deep, 4 ft. broad, containing a bone awl and some large sub-Iroquois potsherds.

Pit 47: A barrel-shaped pit, 3 ft. 6 in. broad by 5 ft. deep, which contained only oyster-shells.

Pit 48: A bowl pit, 2 ft. across, 8 in. deep, with mussel-shells alone.

Pit 49: A barrel-shaped pit, 3 ft. in diameter by 3½ ft. deep. It held a few shells and a grooved stone club-head.

Pit 50: A shallow, dish-shaped pit, 2½ ft. across, 6 in. deep, without specimens.

Pit 51: Oval, 4½ ft. long, east and west, 2½ ft. broad, by 3 ft. deep, containing only large hard-clam shells, bits of a turtle-shell cup, and three net-sinkers.

Pit 52: Bowl form, 2 ft. 10 in. in diameter by 2 ft. deep, with mussel- and scallop-shells and a few coarse sherds.

Pit 53: Of indefinite shape. At a depth of two feet, the flexed skeleton of a young male on left side, headed west, facing northwest, in such decayed condition that the hands, right forearm, and vertebræ had disappeared. No objects accompanied the burial. Eighteen inches deeper was a six-inch layer of oyster-shells containing a white quartz leaf-shaped blade of poor quality. Six inches above the left shoulder were a number of coarse, crumbly potsherds (pl. XIII, *b*). Judging by the decayed condition of the bones, this may be one of the oldest graves in the locality.

Pit 54: A very large bowl pit, 6 ft. 6 in. across, and 6 ft. 6 in. deep. It held a few shells; two notched, quartz points; a broken, unfinished celt; a red limonite paint-stone, and a few sherds. A stray human vertebra in the eastern side of the pit suggested a grave from which the bones had been taken long ago, perhaps by relatives, for reinterment.

Pit 55: A small bowl pit, 2 ft. in diameter by 3½ ft. deep. In it was the almost complete skeleton of a good-sized sturgeon, curled around the southeastern side of the pit, about eight inches down, together with a small piece of mica, the edges of which seemed to indicate cutting.

Pit 56: A large barrel-shaped pit, 4 ft. 6 in. in diameter by

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3 ft. 4 in. deep. A number of large bowlders were unearthed at the bottom, but there were no artifacts. The shells were principally scallops.

Pit 57: This was one of the bowl form, 3 ft. 6 in. in diameter by 2 ft. deep. It was crammed with tightly wedged oyster and hard-clam shells. At one side was found a large sherd from a typical sub-Iroquois jar (fig. 11, *b*), having a perforation at one edge, showing that it had been part of a vessel cracked in Indian times, but mended by boring at both edges of the fracture and lacing the break together with a thong. Some small, plain sherds also were found.

Pit 58: A large bowl pit, 5 ft. across by 3 ft. 6 in. deep. The contents were large oyster-shells, with a layer of mussels near the center. Fragments of deer antler, a long, unworked bar of schist, some sherds from a small sub-Iroquois jar, a cut bird-bone, a triangular arrowpoint of black flint, and another stemmed point of white quartz, were collected.

Pit 59: A small pit of the barrel form, 2 ft. 4 in. wide by 2 ft. 6 in. deep. It held a few shells, and some broken and crumbling sherds from the rim of a handsomely decorated jar of Algonkian type, which, in addition to incised chevron patterns, showed a raised ornament in the form of a knob or conventional handle near the rim. Beneath the chevrons were rows of short lines impressed in the clay with a cord-wrapped stick before firing. Unfortunately these sherds were so poorly fired that they fell to powder at a touch.

Pit 60: A good-sized bowl-shaped pit, 5 ft. in diameter and 4 ft. deep. A few shells, some indeterminate sherds, a broken flint triangle, half of a pitted hammerstone, and the long, narrow plastron of a musk (?) tortoise formed the complement of specimens.

Pit 61: A bowl pit, 3 ft. broad by 2 ft. deep, with the usual oyster-, scallop-, and clam-shells. In the way of artifacts were found a cut and perforated phalangeal bone of a deer (fig. 5, *b*), a bored fragment of tortoise-shell, two cut bones, a broken bone awl, a complete carapace of the box-tortoise partially made into a cup, and some sub-Iroquois sherds.

Pit 62: A small, sunken fireplace, 2 ft. across and 1 ft. deep, containing a few shells among burned stones and charcoal, and, by

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way of specimens, some indeterminate potsherds and a piece of worked turtle-shell.

Pit 63: A small, oval pit, long axis north and south, 3 ft. 6 in. long by 2 ft. broad and 3 ft. deep. The usual shells, and, among these, part of a tortoise-shell cup with scalloped or nicked edges (fig. 7), and some bits of a tiny toy jar of the sub-Iroquois type, no more than three inches tall.

Pit 64: Small, bowl-shaped, 2 ft. across by 10 in. deep. Contents, besides burnt stones, only one net-sinker and a small sherd.

Pit 65: A large, bowl-shaped pit, 4 ft. in diameter by 4 ft. deep, containing a few sub-Iroquois sherds, and a bit of cut antler prong partially hollowed, perhaps for the reception of a bone awl. A fox or a woodchuck had dug a long burrow for ten or twelve feet to the east from the bottom of this pit, and in it were a few shells and bones that had been dragged into the den. Perhaps this pit was a semisubterranean storehouse of the Indians, which the animal had invaded.

Pit 66: Rather distant from the rest was this bowl-shaped pit, 5 ft. across by 2 ft. 6 in. deep. It held only a notched or badly grooved stone club-head, and may have been an old corn cache.

Summary of the Pit Finds

(The pits devoid of artifacts or of skeletal remains are omitted)

No.	Objects of Bone	Objects of Stone	Objects of Clay	Skeletons
1	.....	.....	Straight piece of clay pipe stem; indeterminate sherds	
2	Arrowpoint	Triangular arrowpoint	Sub-Iroquois sherds	
3	.....	Polished celt	Sub-Iroquois sherds	
4	Fish-hook, awls	.....	Sub-Iroquois sherds	
5	Antler arrow; awl	Two net-sinkers; triangle point	Sub-Iroquois sherds; stem of Dutch pipe	Two human fingerbones
6	Five awls	Notched maul; hammerstone	Sub-Iroquois sherds	

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SUMMARY OF THE PIT FINDS—(*Continued*)

No.	Objects of Bone	Objects of Stone	Objects of Clay	Skeletons
7	Two cut bones; notched awl	.....	Part of pipe; Algonkian, sub-Iroquois, and plain sherds	
8	.....	Hammerstone		
9	Long awl	Triangular point; hammerstones		
10				
11	Awls	Nine net-sinkers	Sub-Iroquois sherds	
13	.....	Notched point	.....	Two flexed males, N.E.
14B	.....	.....	Sub-Iroquois sherds	Dog's skeleton
16	.....	.....	Plain sherds	
17	.....	.....	" "	
18	.....	.....	Sherds from at least two sub-Iroquois jars	
19	.....	Triangular point	Part of Indian clay pipe and Dutch clay pipe	
22	.....	Net-sinker; hammerstone	Sherds of two sub-Iroquois jars	
23	Piece of cut bone	.....	.....	Old male, flexed, headed S.W.
25	.....	.....	.....	Male, flexed on back, headed S.E.
26	Sawed beef-bone	.....	Piece of a Dutch clay pipe	Male, flexed E.
27	Bone harpoon barb			
28	Two bone awls	.....	Algonkian sherds	
29	.....	.....	Indian pipe-stem; plain sherds	
30	.....	Flint triangle; net-sinker	Sub-Iroquois sherds	
31				
32	.....	.....	Broken sub-Iroquois jar	
33	Notched awl	.....	Plain sherds	
34	.....	.....	Sub-Iroquois sherds	
36	Awl	.....	Plain sherds	
37	Two awls; a cut bone	.....	Sub-Iroquois sherds	

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SUMMARY OF THE PIT FINDS—(*Continued*)

No.	Objects of Bone	Objects of Stone	Objects of Clay	Skeletons
38	.....	.....	Sherds	
39	Two awls	.....	"	
40	.....	Eleven net-sinkers; a reject	Sherds of two sub-Iroquois jars	
41	Cut turtle-shell	Flint triangle	Sherds of sub-Iroquois jar	
44	Bone batten or knife; bone awl	.....	Sub-Iroquois sherds	Adult male, flexed, headed S.E.
45	Bits of turtle cup	Net-sinker	Sub-Iroquois sherds	
46	Bone awl	.....	Sub-Iroquois sherds	
49	.....	Grooved club		
51	Bits of turtle cup	Three net-sinkers		
53	.....	.....	Algonkian sherds	Flexed male, headed W.
54	.....	Two notched points; paint stone; incomplete celt	Plain sherds	One human vertebra
55	.....	Piece of mica	.....	Skeleton of sturgeon
57	.....	.....	Sub-Iroquois sherds	
58	Cut bone	Flint triangle; notched point	Sub-Iroquois sherds	
59	.....	.....	Algonkian sherds	
60	.....	Broken flint triangle; broken hammerstone		
61	Two cut bones; worked deer phalanx; bored turtle-shell; broken bone awl; turtle cup	.....	Sub-Iroquois sherds	
62	Worked turtle-shell	.....	Sherds	
63	Decorated turtle-shell cup	.....	Sub-Iroquois sherds	
64	.....	Net-sinker	Sherd	
65	Cut antler	.....	Sub-Iroquois sherds	
66	.....	Notched club		

Of all the sixty-six pits, fifteen contained no artifacts; twenty-five had articles of bone or antler; twenty-two, objects of stone,

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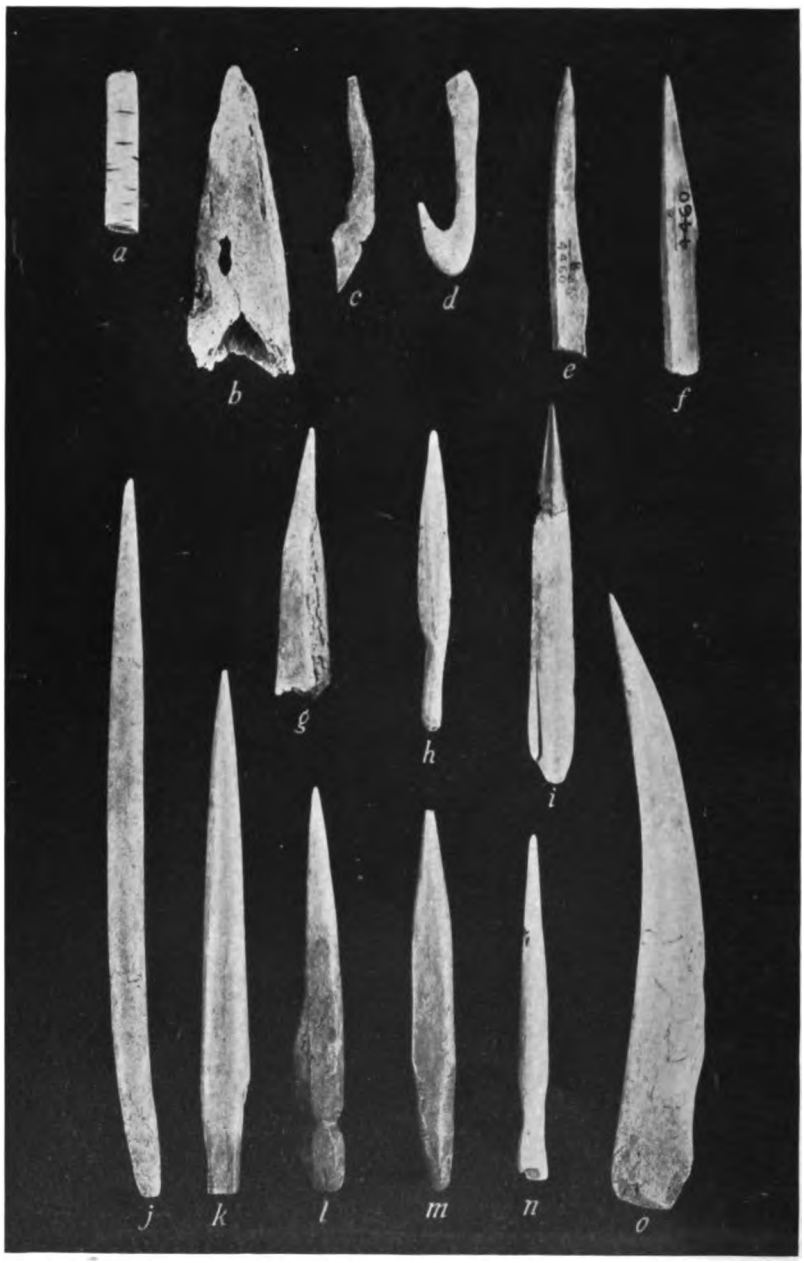

BONE IMPLEMENTS FROM CLASONS POINT

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of which six were triangular arrowpoints and four notched points; thirty-nine, parts of pottery vessels; four, portions of pipes of native manufacture; and three, Dutch trade-pipe fragments. Six were grave pits containing five single burials and one double burial; one held a dog, and another a sturgeon's skeleton.

ARTICLES OF BONE

The natives of Snakapins village possessed greater skill in boneworking than the occupants of the older part of the Schley Avenue site, as is clearly indicated by both the variety and the quality of the specimens found. Certain archaic forms, such as the notched awls, first known to archeologists from the Schley Avenue shellheap, still persisted, as did the crude sliver awls, but well-worked and polished examples were not uncommon.

At Snakapins, twenty-seven awls, whole and broken, were obtained, a relatively large number when considered in the light of the area excavated. Of these, only eight are of the typical, local, sliver type (pl. x, *e*, *f*), so abundant at Schley avenue in the older deposits. If one may judge from the specimens figured by Beauchamp[1] and by Boyle,[2] and those found by Houghton,[3] this crude form is rare or wanting in the Iroquois region, from the Mohawk country westward to the Neuter Nation, and onward through the territories of the Huron and Tobacco nations. This belief is also borne out by the collections from these regions in the Museum of the American Indian, Heye Foundation, and by the writer's field work. It is then safe to maintain that this stubby, slovenly-made awl, consisting only of a rudely pointed, bone sliver, is characteristic of the wretched early bonework of the tidewater Algonkian tribes of New York, adjacent New Jersey, and Connecticut.

Pl. x, *c*, exhibits a variant of the form slightly notched at the base. It is possible that, in Snakapins at least, some of these stubby awls had antler handles.

The Iroquois type of bone awl, which is well finished and

[1] Beauchamp, Wm. M., Horn and Bone Implements of the New York Indians, *Bull. 50, New York State Museum*, Albany, 1902.

[2] Boyle, David, Annual Archæological Reports, Provincial Museum, Toronto.

[3] Houghton, F. W., Archæology of the Niagara Frontier.

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polished, showing work over its entire surface, is represented by three complete and five broken specimens (pl. x, *g–k*). Of these, fig. *i* is interesting in that a longitudinal groove on the left shows how the bone was dressed to shape by cutting, or rather sawing, with a stone knife, as well as by rubbing on a grit-stone, apparent at the butt. The specimen still retains a high polish, and the point has been charred black, possibly to harden it.

Fig. *k* represents a large awl of the same type, upon the partially broken butt of which may be seen four faint notches or tallies, and fig. *j* shows an unusually long, thin, delicate specimen, made with a rounded butt.

All of the foregoing examples seem to have been from the bones of deer or other large mammals, whereas splinters of the hollow bones of birds often afforded material for the sliver awls.

Fig. *o*, representing a curved awl made from a rib, exhibits no great skill in workmanship. It was found deposited with a human skeleton in Pit 44, the grave which contained the bone batten (fig. 6).

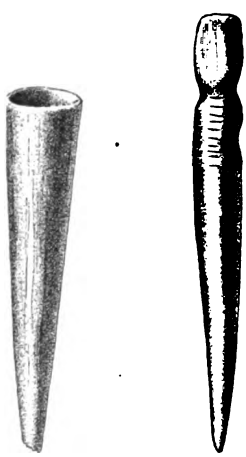

FIG. 4.—*a*, Antler arrow-point. *b*, Notched bone awl showing tally marks.

A single example, and that minus its point, of an awl worked from the bone of a small mammal and retaining the joint as a natural grip or handle, was found, though awls of this class were not rare at the Schley Avenue site.

Four awls of the notched type, first reported from Throgs neck, were obtained (pl. x, *l–n*, and fig. 4, *b*); of these fig. 4, *b*, which still retains its high polish, is roughly quadrangular in cross-section, and shows thirty-three tally-marks on its four corners, in groups of 11, 6, 9, and 7, respectively. Mr Amos Oneroad, the writer's Sisseton Dakota assistant, suggests that the industrious owner thus recorded the number of leathern suits or pairs of moccasins sewn with this tool, the Dakota women marking the antler handles of their hoe-like hide-scrapers in this manner to record

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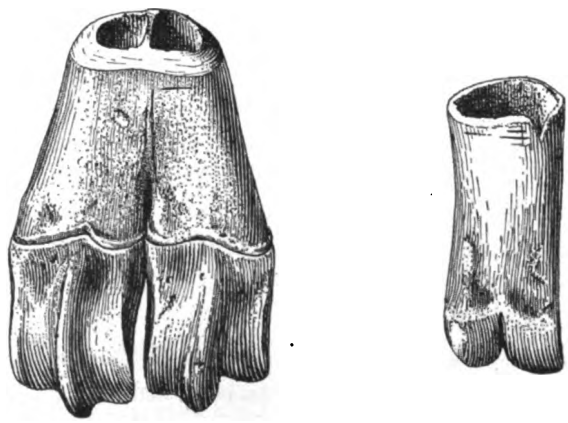
the number of robes tanned. The suggestion is so consistent with Indian custom that I venture to offer it as at least approximating the truth.

Fig. *m* is alone in being double-pointed, the two tips being found and fitted, but both were lost owing to an unfortunate accident. It must have been an awkward tool to use, if indeed it was an awl.

Objects of Cut Bone

Next in number to the bone awls, articles of bone showing cutting or working with stone tools were in evidence. Of a total of ten specimens, four seem to be complete implements, having had a definite purpose which is not easily determined. These four consist of the knuckle ends of the long-bones of the Virginia deer, sawed off, and two longitudinal holes, or sockets, cut side by side in the spongy interior (fig. 5, *a*). This type of bone object is neither new nor undescribed from sites of this period, as the writer figured a similar specimen, found at Van Cortlandt Park



a *b*

Fig. 5.—*a*, Object of cut deer-bone artificially hollowed. *b*, Metacarpal of a deer, cut and perforated for use as a jingler or for the cup-and-pin game.

about thirty years ago, in his article on the "Archæology of Manhattan Island." [1]

[1] *Anthropological Papers of the American Museum of Natural History*, vol. III, p. 113, fig. 11.

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The other six specimens of cut bone show merely the process of this phase of aboriginal workmanship. One, a bird-bone, is sawed across longitudinally. The scapula of a deer is deeply scored in four places where the Indian workman attempted to cut out a rectangular portion by sawing in from both sides. A section of heavy bone or antler, too badly burned for identification, has been partially worked down toward a point by vigorous scraping with a stone tool.

Miscellaneous Bone Objects

Pl. x, *d*, depicts one of the rarest articles found at Snakapins, a bone fish-hook. The barb is clumsy and heavy, as compared with specimens from the Iroquois country, where the idea doubtless originated. The straight end is somewhat enlarged, probably to facilitate attachment to the line.

Only one other perfect specimen of bone fish-hook is on record from tidewater New York. This was obtained in a shellheap at Sag Harbor, Long Island, by the late W. W. Tooker, and is figured by Abbott,[1] and also by Beauchamp and Rau.[2] It appears to be much larger and better made than the Snakapins specimen. Of this Sag Harbor hook, Beauchamp says: "The basal curves, however, come to a point, greatly increasing the strength of the implement there. In this respect it is unique." The Snakapins specimen shows the same peculiarity. In the Museum of the American Indian, Heye Foundation, is a fragment of a bone fish-hook shaft found by Mr Foster H. Saville in a shellheap at Soak Hides, Three Mile harbor, Easthampton, Long Island. There are none on record from New Jersey or Connecticut.

Fig. 5, *b*, shows a metacarpal bone of the Virginia deer, the larger end of which is cut away, the interior hollowed out, and the smaller end perforated by sawing a short slot with an edged stone tool. It was probably used either as a jingler attached to a hand rattle, or to a garment with a string passed through the perforation and knotted on the inside, or as a cup in the "cup-and-pin" game. Like

[1] Primitive Industry, p. 208, fig. 193.

[2] Beauchamp, Horn and Bone Implements, etc., fig. 209, p. 307. Rau, Prehistoric Fishing in Europe and North America, Washington, 1884, fig. 189.

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specimens are not uncommon on Iroquois sites in central New York, where the writer, among others, has collected them; but they are new to the tidewater region. Abbott figures a somewhat similar example found in an Indian grave in Lagrange street, Salem, Mass.[1]

There is a large bone tube or bead, said to have come from Pelham Bay Park, in the collection of the American Museum of Natural History, but its general appearance suggests an origin on one of the Neutral sites near the Niagara frontier. Pl. x, *a*, however, shows a small bone bead, bearing many ornamental cuts or scores in which a dark pigment or gum seems to have been daubed. Besides the large Pelham tube of doubtful use and origin, this is the only bone bead known from coastal New York. The absence of these ornaments from tidewater Algonkian sites is the more remarkable since they are exceptionally abundant from one end of the Iroquois country to the other. The writer has himself found numbers on Seneca, Cayuga, and Neutral sites, and as many as thirty at least were taken by him from a single pit on the famous Erie site at Ripley, Chautauqua county, New York, afterward thoroughly explored by Parker.[2]

The presence of this bead at Snakapins is only another evidence of Iroquois influence. No writer on Iroquois archeology from the Mohawk valley to Georgian bay has failed to comment on the abundance of these articles.

Pl. x, *b*, shows a flat, triangular, bone arrowpoint, hollowed to receive the shaft. Such points are common on sites of this period, and have been repeatedly described by the author. The best and most numerous examples known were obtained by Mr George H. Pepper in a triple grave at Tottenville, Staten Island.[3] The common form among the Iroquois seems to have been different, being more usually flat and imperforate, or, if perforated, to have been conical in shape. An excellent article on bone and antler arrowpoints,

[1] Abbott, C. C., Primitive Industry, p. 399, fig. 376.

[2] Parker, A. C., An Erie Indian Village and Burial Site, *Bulletin 117 of the New York State Museum.*

[3] Skinner, The Lenape Indians of Staten Island; also Archæology of the New York Coastal Algonkin, *Anthropological Papers, American Museum of Natural History*, vol. III, pp. 15, 44, and 229 respectively. Also, Indians of Greater New York, p. 126.

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by Mr C. C. Willoughby, should be used for reference by those interested in the subject.[1]

The other specimen, which lacks the point, is more deeply barbed, and may possibly be in reality part of one of those locally rare articles, a bone harpoon, though it is not of the usual form, being hollowed.

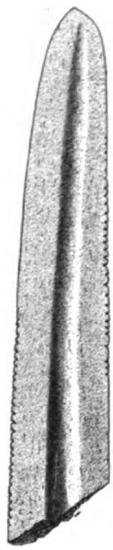

FIG. 6.—Bone batten or dagger.

Bone Batten or Dagger.—This unique specimen, the butt of which is missing, was found in Pit 44, near the knees of the skeleton (fig. 6). It may be a batten, probably for weaving Indian hemp garments.[2] The edges show a multiplicity of fine notches, such as appear on similar bone objects found at Hawikuh, New Mexico, and elsewhere. The notches, however, seem almost too clean-cut, and do not have the worn appearance that might be expected if the tool had been frequently used. While blunt at the point and dull on the edges, it resembles to some extent a bone dagger from Brewerton, central New York, figured by Beauchamp,[3] but the latter specimen lacks the side notches.

The fact that a bone awl, generally considered a sewing tool, was the only other object found in this grave, may also bear on the assumption that our specimen was a batten.

ARTICLES OF TORTOISE-SHELL

Remnants of six shells of the common box-tortoise that show Indian workmanship, and one complete shell partially prepared for use as a cup or a bowl, were found. Possibly other fragments were unearthed but not recognized, since often the amount of artificial modification necessary to manufacture a cup was negligible.

While shells of the wood tortoise, as well as of the spotted,

[1] Antler-pointed Arrows of the Southeastern Indians, *American Anthropologist*, n.s., vol. III, p. 431.

[2] Harrington, A Preliminary Sketch of Lenape Culture, *American Anthropologist*, n.s., vol. XV, p. 220.

[3] Beauchamp, Horn and Bone Implements of the New York Indians, p. 267, fig. 60, pl. 6.

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painted, musk, snapping, and diamond-back tortoises were found repeatedly in the pits, only the shell of the box-tortoise was favored as material by the native workers, and this is easily explained by the fact that the carapace of this species, especially of the females, is very round and high, and naturally cup-like.

Usually the Siwanoy craftsman at Snakapins prepared his cup by scraping away the spinal processes and other bony attachments inside the carapace, and then by trimming the flaring edges of the shell. Curiously enough, the bright-colored scales on the exterior were not generally retained for ornamentation, as the exterior surface of the shell often shows considerable wear from the stone scraper of the worker. Fragments of the trimmed edges of these shell cups are among our specimens. Possibly such thinly-scraped cups lost considerable strength in the process, which may account for their fragmentary condition. Oddly enough, while undressed tortoise-shells usually are found parted along the sutures, worked shells are more usually broken across them.

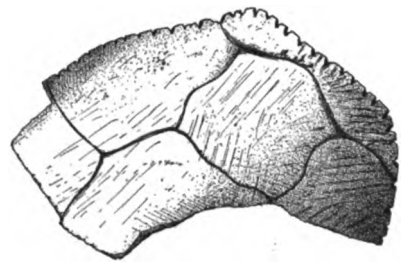

FIG. 7.—Fragment of an ornate tortoise-shell cup.

Plain turtle-shell cups of the type described are no novelty at tidewater Algonkian sites. They have been found abundantly by the writer on the Bowmans Brook site at Mariner's Harbor, Staten Island, and by Pepper and others at Tottenville. The writer has also found them at Shinnecock hills, Long Island, and in the shell-heap at Inwood, Manhattan borough.[1] These cups do not seem to be found in the Iroquois country, possibly because the box-tortoise does not commonly occur so far north.

Fig. 7 represents a portion of an unusually ornate specimen, much cut down and well scraped, the edges ornamented with blunt serrations or scallops. Another fragment, from a different shell, shows the same peculiarity, but to a lesser degree. Only one other

[1] Skinner, *Anthropological Papers of the American Museum of Natural History*, vol. III, pp. 23, 230. Harrington, ibid., p. 173.

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specimen thus ornamented is known to the writer, a fragment which he found in a shell-pit on the Bowmans Brook site, on the property of the Downey Ship Building Corporation, at Mariner's Harbor, Staten Island. This specimen, also in our collection, is not only nicked about the edges, but deeply cut in a step-like series of scallops.

A piece of tortoise-shell through which a tiny hole has been bored was also found at Snakapins, but its character cannot be determined from so small a piece. It may have been either a portion of a broken cup mended by boring and lacing, or a bit of a tortoise-shell rattle, an example of which was found by Mr Harrington at Pelham Bay Park, not many miles from Clasons point.[1]

OBJECTS OF ANTLER

Contrary to our experience at Throgs neck, where the Schley Avenue site yielded objects of elk as well as Virginia deer antler, no artifacts made of the former substance were secured at Snakapins. Indeed, objects of antler were not abundant there, although whole or broken antlers were found in numbers in the pits. Only four implements of this material were gathered. These were:

Fig. 4, *a*, shows a partly hollowed, conical arrowpoint made of the tip of a prong, dressed down to a sharp, slender point. The specimens from the older parts of the Schley Avenue shellheap are without exception thicker, clumsier, and with only a suggestion of hollowing. This is also true of several such points found by the writer at the bottom of the shellheap at Inwood. From the fact that the Snakapins specimen and those found at Burial ridge, Staten Island, are a decided improvement on the older specimens, in matter of appearance and general effectiveness, it may be surmised that Iroquois suggestion or example was brought to bear on this subject, as well as on so many others touched on in this paper. The older specimens could not have been attached firmly to their shafts without a copious use of glue or gum, but the Snakapins and Staten Island examples were well fitted to cap a shaft.

Antler arrowpoints were commonly used by the Iroquois, and have been found among a number of the Central Algonkian tribes

[1] Harrington, Ancient Shell Heaps near New York City, *Anthropological Papers of the American Museum of Natural History*, vol. III, p. 173.

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up to very recent years. They are fully treated in the references given in the accompanying account of bone arrowheads.

A fragment of a cylinder made from a deer's horn was found. This is no doubt a piece of one of the common tools used by all the Eastern tribes for flaking arrowheads from suitable stone by pressure. They have been found by the writer in Erie graves at Ripley, Chautauqua county, New York, accompanying flint raw material and finished points, as though deposited in a bag with the other petty paraphernalia of the owner. Houghton[1] has similarly obtained them from Seneca graves, and the writer found one with several hundred chips of flint, jasper, and quartz, and a perfect arrowhead, in a small deposit beneath the Inwood shellheap. They have likewise been recorded from all tidewater sites of the late prehistoric to the historic period.

In this connection the observations of Captain John Smith on the Virginia Algonkians are worthy of note. He says:

"His arrow head he quickly maketh with a little bone, which he ever weareth at his bracert, of any splint of stone, or glasse in the forme of a heart, and these they glew to the end of their arrowes. With the sinewes of Deere, the tops of Deeres hornes boyled to a ielly, they make a glew that will not dissolue in cold water."[2]

Many antler prongs, broken off, perhaps to boil for making glue, were unearthed, but only two show working. In both cases the extreme points of these had been sawed off with a stone knife and the ends slightly hollowed as though to receive some object. Perhaps these were intended as handles for bone sliver awls.

The scarcity and poorness of antler tools at Snakapins may be accounted for by the fact that in shell-pits antler usually disintegrates more rapidly than in a deep shellheap, such as that at Schley avenue. This, however, is also true of bone, and bone objects were abundant and well preserved.

[1] Houghton, F. W., The Seneca Nation from 1635 to 1687, and, The Characteristics of Iroquoian Village Sites of Western New York, *American Anthropologist*, n.s., vol. XVIII, p. 512.

[2] Travels and Works of Captain John Smith, Part I, p. 364, Edinburgh, 1910. For a fuller account of the making of flint arrowheads by pressure with "a little bone," the reader is referred to Flint Working by Ishi, by Nels C. Nelson, *Holmes Anniversary Volume*, Washington, 1916, p. 397.

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STONEWORK

At Snakapins, specimens of stone, if we except net-sinkers, were extremely rare. One small polished celt (pl. XI, *g*) and one broken and unfinished example were collected. No grooved axes appeared.

In all, nineteen chipped stone objects were gathered, including surface finds. Of these, eleven are triangular arrowpoints, six are stemmed or notched, and two are inclined to a lanceolate or leaf-shape form. One of the notched variety was found in a grave at the knees of a skeleton.

Little need be said concerning the chipped stone work at Snakapins, a selection of specimens being shown in pl. XI, *a–f* and *i–l*. It is one of the peculiarities of the culture of the Iroquois that they were poor stoneworkers as a rule, even though they could and did make beautiful pipes of stone. They used almost exclusively small triangular arrowheads of flint, and were not makers of grooved axes. Slate banner-stones, two-holed gorgets, and the like, were not a part of their material culture. They did not possess the long stone pestle.[1]

When, therefore, the tidewater Algonkians were thoroughly under the influence of the eastern Iroquois tribes and the culture complex of the latter became firmly implanted, a decadence in local stone art entered side by side with the rejuvenation of bone and clay as working materials.

In the lower levels at Schley avenue, banner-stones, notched, grooved, and perforated gorgets with two or more holes, grooved axes, long stone pestles, and a variety of forms of flint-work were obtained. At Inwood the grooved axe, the two-holed type of gorget, and numerous forms of chipped stone abounded at some depth from the surface. The later pits at Schley avenue and the surface layer of the great heap yielded fine bone and pottery, but poor stonework. Deeper, among very many stone points, only two were triangular, while eleven were found nearer the surface.

At the Bowmans Brook site at Mariner's Harbor, Staten Island,

[1] See Houghton, F. W., The Characteristics of Iroquoian Village Sites of Western New York, *American Anthropologist*, n.s., vol. XVIII, p. 508. Beauchamp, Horn and Bone Implements, especially p. 252. Parker, A. C., The Origin of the Iroquois as Suggested by their Archeology, *American Anthropologist*, n.s., vol. XVIII, p. 479.

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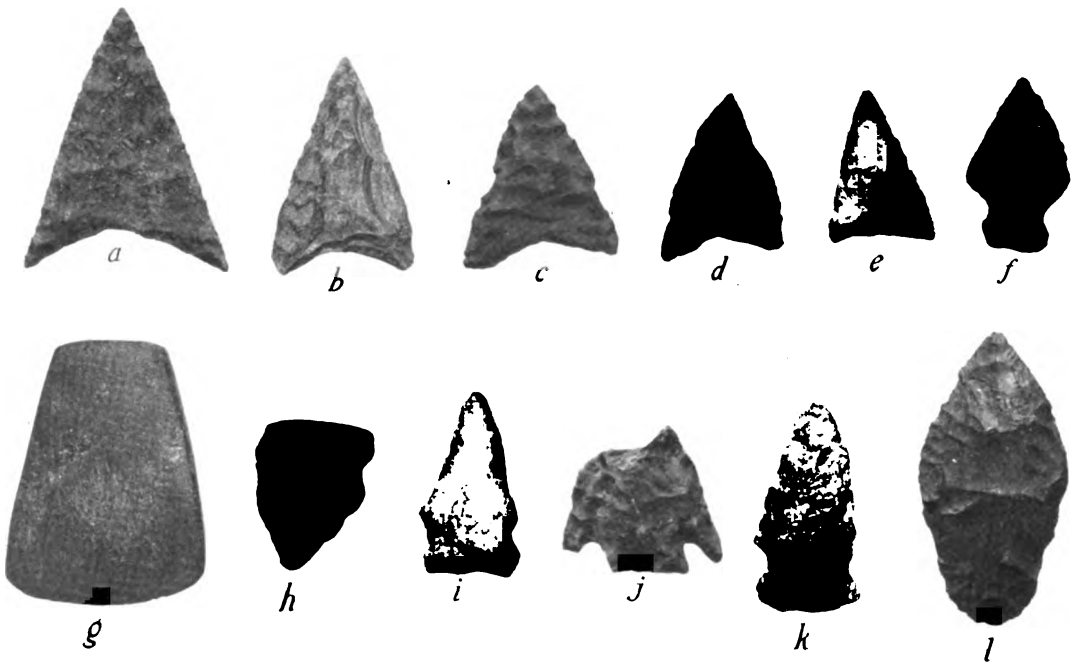

STONE IMPLEMENTS, AND PORTION OF AN EARTHENWARE PIPE BOWL (*h*) FROM CLASONS POINT

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which was probably contemporary with Snakapins, grooved axes still held their own at the time the place was abandoned, but all other stone artifacts, except sinkers and hammers, were on the wane. The Iroquois taught the tidewater Algonkians nothing about stonework: they merely caused the local people to favor certain types they had always known, to the exclusion of others.

At Snakapins net-sinkers were usually carelessly made from small, flat, decayed masses of local micaceous schist, notched on the two nearest sides, and roughly rectangular. They are the poorest implements of the kind yet collected locally, but were abundant, forty-two being found in all, as many as eleven in Pit 40, and nine in Pit 11. They were not nearly so abundant at Schley avenue. A few were hastily made from field pebbles. There seems no reason to doubt the use of these objects as net-sinkers. The writer, fifteen years ago or more, saw bricks, similarly notched on the sides, used for the same purpose by the remnant of the Shinnecock Indians then resident at or near Southampton, Long Island; but Mr William C. Orchard suggests that some of these stones may have been used as weights for weaving. The form is everywhere common in the Eastern states.

A grooved club, the groove running round the longer axis of the oval pebble of which it was made, was obtained. It is of a form common throughout tidewater New York, and the writer has seen and collected examples on the shores of Cayuga lake and Seneca river on old Algonkian sites of pre-Iroquois origin. It is axiomatic among archeological students that no grooved object can be Iroquois in origin or inception.

Hammerstones, both with and without pits on the flat sides, were found to the number of six, of which five are pitted. The form is too common to need comment. Some may have been used as mullers for grinding corn on a very shallow stone mortar. None of the latter were obtained, probably for the reason that any which were abandoned by the Siwanoy at Snakapins lay on the surface, and therefore would have been taken away with other small bowlders by early settlers for wall or fence building.

A small piece of mica, of nondescript shape, with edges that may

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have been cut, was found in one of the pits, but it merits little attention.

Fragments of soapstone vessels were not found, nor are they to be expected on a site of so late a date.

An irregularly shaped, flat bit of red limonite, from one of the pits, was smoothed and scored all over one surface where the natives had scraped it to obtain pigment, most probably for facial and body painting. Such paint-stones occur without fail on nearly all local sites.

A beach pebble with the edges abraded by use in rubbing was also collected.

OBJECTS OF EARTHENWARE

Pipes

Fragments of four clay pipes of native manufacture, and the stems of three trade pipes presumably imported from Holland, were gathered at Snakapins. Of the former, one fragment is merely a small fraction of the mouthpiece; another is a portion of the stem and bowl of a plain, black, clay pipe, the mouthpiece and most of the bowl of which are missing. The bowl, which was squat and stubby, left the stem at an angle of thirty-five degrees. The most interesting feature of this badly-broken specimen is that the bowl was apparently modeled solid and then the soft clay dug out of the interior with a sharp stick or reed, the rough gouge-marks never being smoothed away. The stem seems to have been molded about a reed or a heavy stalk of coarse grass that burnt away when the pipe was fired.

In one of the first pits opened, most of a plain pipe of brown clay, with the bowl and the stem at only a slight angle, was found. A large part of the bowl was missing, however. This pipe is of better workmanship than that last described, and even has a well-smoothed exterior suggesting the polish found on Iroquois specimens. The form is typical of the local Algonkian tribes. The writer found a more complete, though more badly broken and smaller specimen, in a shell-pit at the Bowmans Brook site, Mariner's Harbor, Staten Island, and a perfect example, of steatite,

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to be described in a later paper, in the Manhattan Island shellheap at Inwood; both of these specimens, however, had the bowl and the stem in the same plane. All of these, save the Staten Island specimen, are in the collections of the Museum of the American Indian, Heye Foundation. The writer has seen several examples of tubular pipes in private collections in southern New Jersey, and Beauchamp figures a pottery example[1] from Union Springs, New York. The finder, Mr W. W. Adams of that place, showed the site whence it came to the writer, who did some excavating there in August, 1916. As might be expected, it is Algonkian and pre-Iroquois. This form is not Iroquois. Of the two types, the variety in which the bowl is set at a slight angle is the more common.

A fragment of a pipe-bowl, well made and of good quality, exhibits a parallel, horizontal-line decoration (pl. XI, *h*) similar to one of the most common pan-Iroquois pipe forms.

Pipes, being semi-ceremonial in their function, were less apt to be influenced by Iroquois notions, and even though occasional alien forms occur, on the whole the tidewater Algonkians were very conservative about adopting them, despite the unquestioned superiority of Iroquois smoking utensils. Fig. *h* presents a rather unusual exception.

Pottery Receptacles

Pottery vessels were common utensils in the wigwams at Snakapins, thirty-nine of the sixty-six pits containing sherds, representing fifty-five or more receptacles. Nevertheless, the Siwanoy were thrifty enough to mend cracked or broken vessels by boring holes in the opposing edges of a crack and lacing the fractured parts together, as is shown in a number of instances.

All the Leland Avenue jars seem to have been made of local clay tempered with coarse beach sand, burnt and pounded micaceous schist, or granulated shell, and all seem to have been fashioned by the usual coiling process. Nearly all are well-baked, although a few show disintegration through faulty firing. In color the jars range from grayish yellow, in some cases almost a light salmon pink,

[1] Beauchamp, Earthenware of the New York Aborigines, *Bulletin 22, New York State Museum*, p. 123, no. 179.

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to jet black, with most of the examples showing a grayish hue. None seem to have been of very large size, although several had each a capacity of a couple of gallons. One diminutive toy vessel is represented by several fragments. Many still show soot encrusted on the inner surface.

Of the fifty-five clearly definable as separate vessels, twelve were Algonkian in type, thirty-seven of modified or sub-Iroquois form, three distinctly Iroquois, and three indeterminate.

ALGONKIAN POTTERY

As nearly as can be ascertained from the fragments, all of the purely Algonkian jars are of the well-known pointed-bottom type. In point of decoration none of this series shows anything new or elaborate, and on the whole all are inferior to those found on the Bowmans Brook site at Mariner's Harbor, Staten Island, but about equal to those from Port Washington, Long Island. All are better than the best from the Schley Avenue shellheap.

Two of these vessels are entirely plain, and one nearly so; six exhibit decoration made by impressing a cord-wrapped stick on the outer surface of the jar while the clay is moist, one with a short, wooden stamp with notched edges, one with a fork or a comb-like instrument having three or four prongs, another with impressions of the triangular end of a stick or a reed, and one with a frieze of parallel, perpendicular lines scratched with a bone or wood sliver. One only of the vessels exhibits the bold, free-hand chevron designs so characteristic of the same class of ware from Manhattan and Staten islands. In all the decorated zone was confined to the rim and a strip below it, usually but not always narrow, and none were decorated on the inside of the lip, as often occurs in this region. In four cases the rim flares outward. In one example the rim is drawn inward so that it is narrower than the body of the vessel.

Fig. 8, *b*, illustrates a rim sherd from a rather plain vessel of this series. The neck bends inward a little, while the upper edge flares outward. The design consists of a neck-band of parallel, perpendicular lines, scratched with a sharp implement, and confined by two horizontal lines an inch and a half apart.

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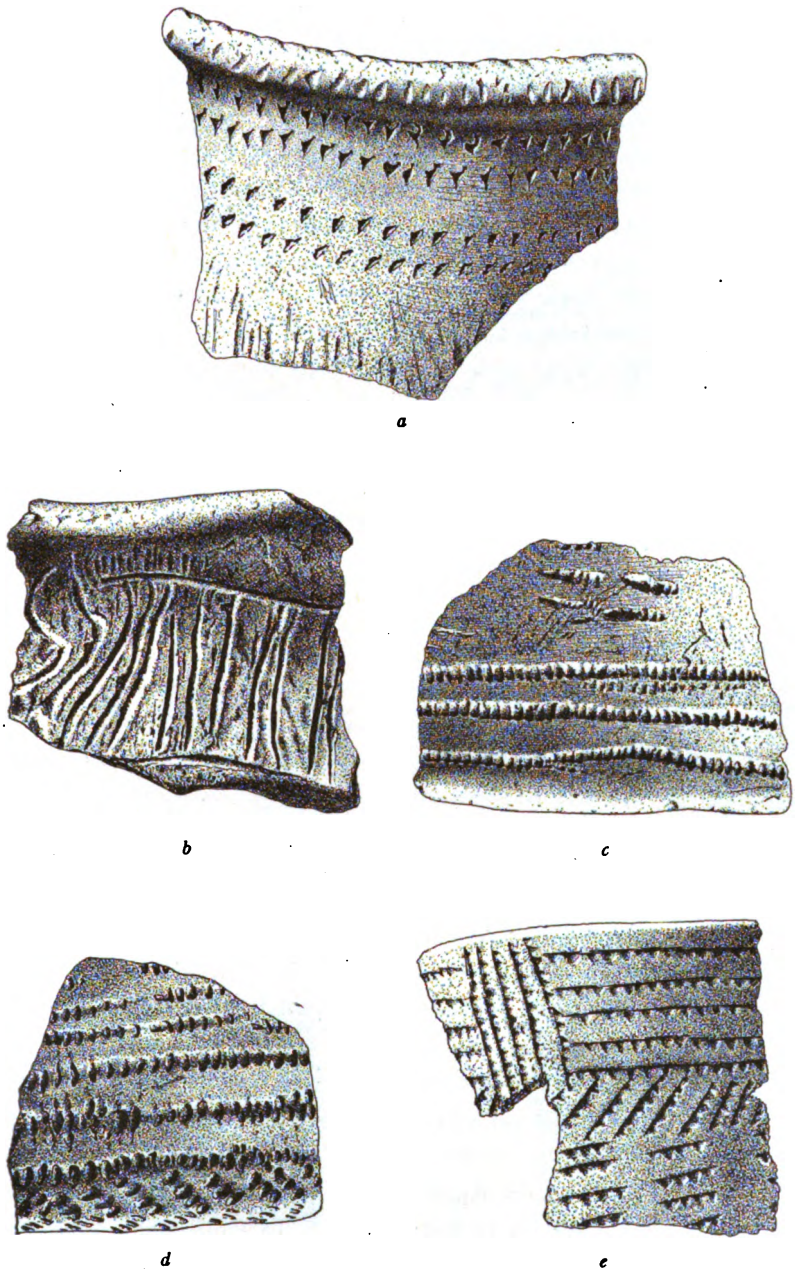

FIG. 8.—Sherds of rims of Algonkian vessels.

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Fig. 8, *c*, represents a sherd with three continuous horizontal bands round the rim, made by pressing a cord-wrapped stick. Beneath these are a series of perpendicular rows of short bars, made by stamping with the end of the stick.

Fig. 8, *d*, shows another specimen decorated with a cord-wrapped stick in a series of horizontal rows, with oblique lines inclining to the left at the top. On the upper edge of the rim these angle off at forty-five degrees with bars inclining to the right.

Fig. 8, *a*, exhibits a sherd of the rim of a fine jar, ornamented by pressure with the end of a stick or a stalk of coarse grass, triangular in cross-section. Four rows in two groups encircle the neck of the jar, the lip bends over, and the outer and inner angles are scored with the round side of the stick.

Fig. 8, *e*, shows a piece of the most ornate of all the purely Algonkian jars from Snakapins. The grouping of the lines in vertical, horizontal, and slanting rows suggests the designs on Iroquois vessels. The work seems to have been done with a small tool made of bone, antler, or wood, notched on one edge, perhaps used as a roulette.

One sherd of unusual interest was in such bad condition, owing to poor firing, that it could not be saved. It showed, as it lay in the ground, an unusually deep zone of decoration. The portion nearest the lip was marked in a rude chevron pattern, with a small, raised, oblong knob surrounded by several lines of decoration impressed with a closely-nicked roulette. Below the chevrons were eight or ten broken, horizontal rows of short, dotted lines rouletted in the clay, from which descended double, perpendicular rows of dots at intervals of somewhat more than an inch. Here, of course, the knob was the rare feature, though such have been recorded before.

SUB-IROQUOIS POTTERY

As might be expected from a site of this period, sub-Iroquois pottery was by far the predominant style at Snakapins. The form is a blending of the Algonkian and the Iroquois, the rounded bottom having made its appearance with the constricted neck and a suggestion of the angular and high collar that characterizes

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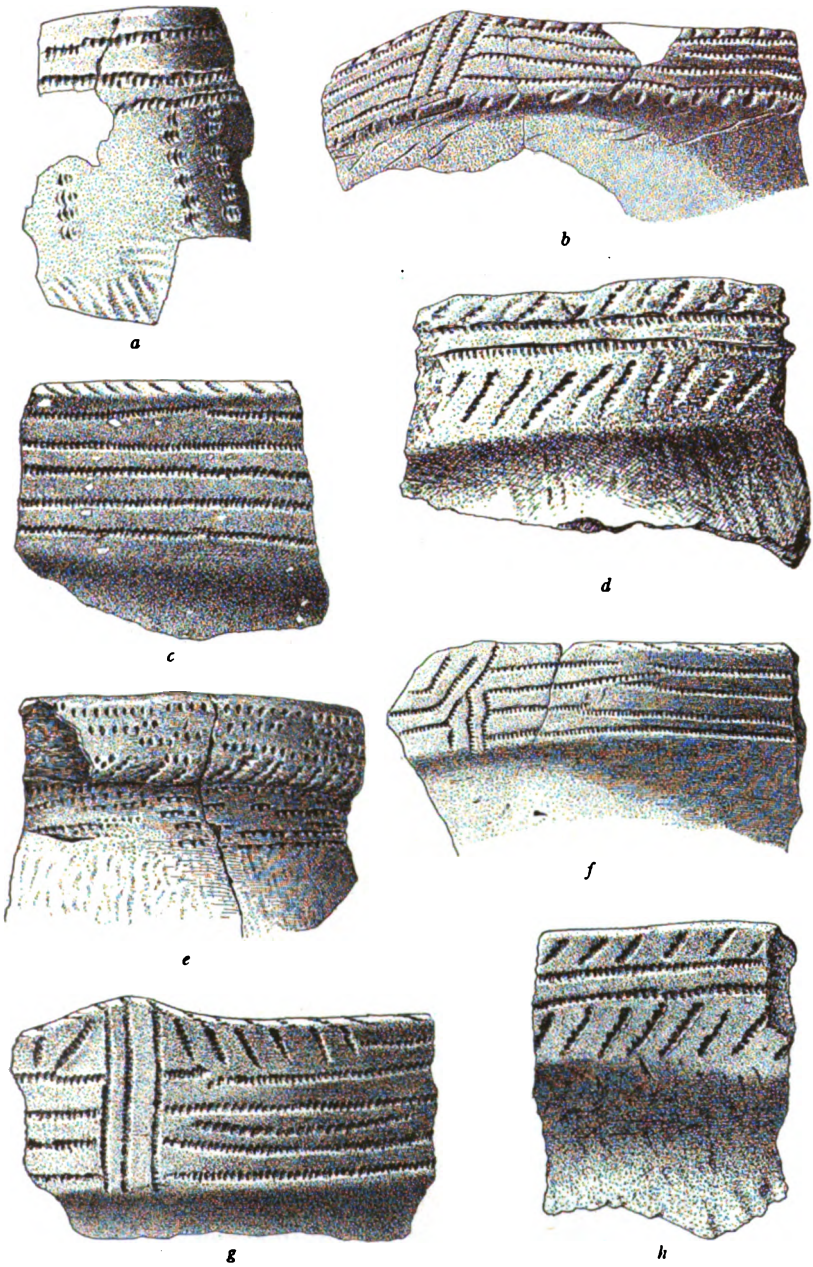

FIG. 9.—Sherds of rims of vessels of sub-Iroquois type.

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eastern Iroquois vessels, and which later became popular in tidewater New York.

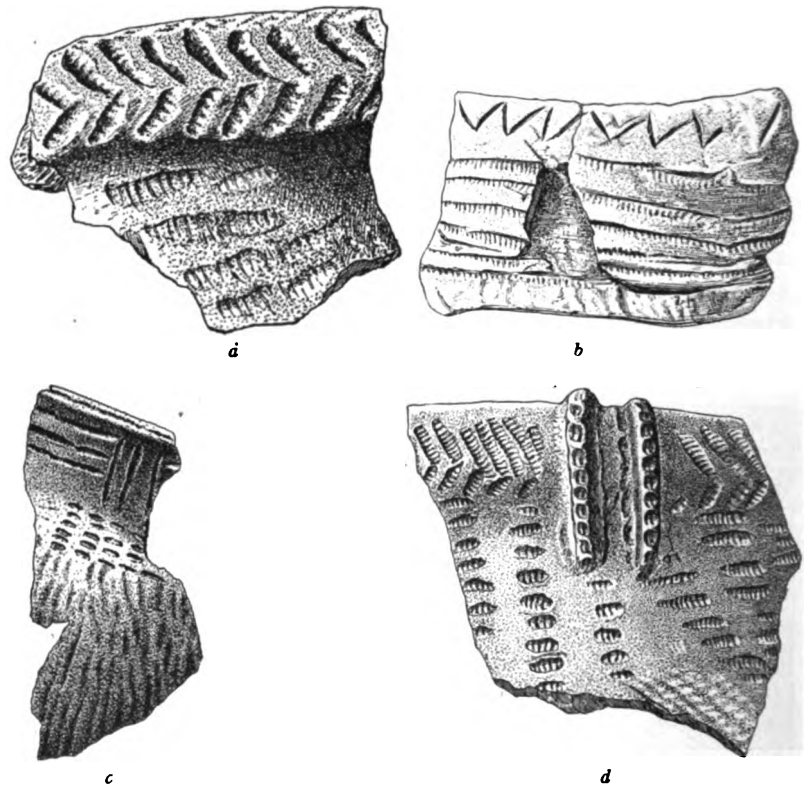

FIG. 10.—Sherds of rims of vessels of sub-Iroquois type.

Pl. XII, *a*, represents a vessel of this class of which enough fragments were recovered to make restoration possible. The dark-gray body is rather more globular than is usual in pottery from Algonkian sites. It measures 11 in. in height by 9½ in. in maximum diameter, and 6½ in. across the mouth. Its capacity is approximately five quarts. The decoration, which is meager, consists of a series of short, vertical lines incised rudely in rows of varying number about the narrow rim. The usual four sharp peaks and angles of Iroquois ware are suggested by three slight rises on the upper edge of the rim; a fourth is needed to balance the effect, but

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SUB-IROQUOIS EARTHENWARE FROM CLASONS POINT

(The two sherds shown at the right are portions of the rim and base of one vessel)

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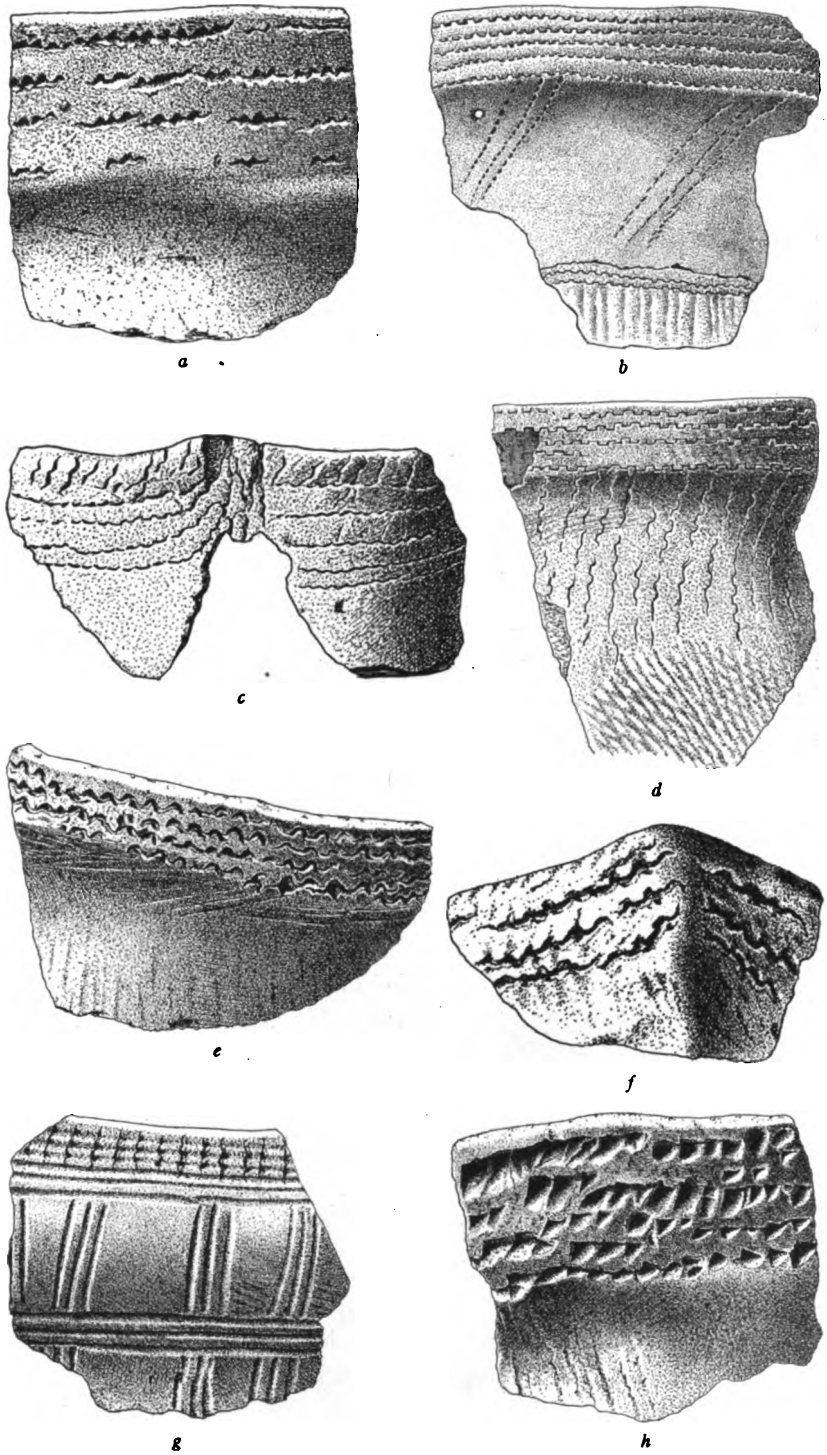

FIG. 11.—Sherds of rims of sub-Iroquois vessels.

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evidently the potter forgot to add it. It is a homely vessel, but quite interesting.

Two other jars of this type are shown in pl. VII, *a*, *b*, of the report on the Schley Avenue site.

That the conservative Siwanoy potters hesitated to abandon the pointed bases which characterize their earthenware vessels is shown in pl. XII, *b*, *c*. Here a vessel of sub-Iroquois type, as indicated by the constricted rim with the usual elevations, was furnished with the time-honored sharp bottom, a combination not hitherto recorded. The design is made with the familiar cord-wrapped stick.

Figs. 9, *a–h*, and 10, *a–c*, show a series of sub-Iroquois rim sherds decorated in stamped designs made with the cord-wrapped stick. In passing, it may be said that true Iroquois pottery from central New York rarely or never is ornamented in this manner.

Next most abundant are portions of vessels of this group which are ornamented by impressing with the edge of a scallop-shell. This was a simple but effective means of decoration, as shown by figs. 11, *a–f*, and 12, which illustrate a series of sherds treated in this manner. Like the foregoing, this form is wide-spread near the coast in southeastern New York.

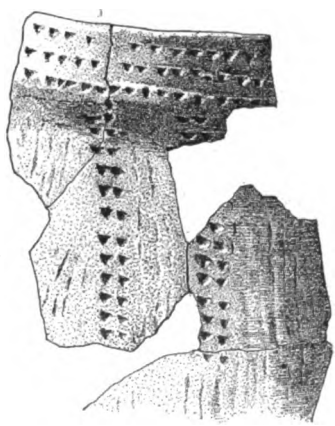

FIG. 12.—Sherd of a sub-Iroquois vessel decorated with the back edge of a scallop-shell.

Pl. XIII, *a*, represents a large sherd, the rim showing parallel bars of decoration apparently made with the rounded end of a narrow stick or bone. The example shown in fig. 11, *h*, is somewhat similarly treated, except that the instrument with which the dots were gouged out was triangular in cross-section.

Fig. 10, *d*, is a large rim sherd from a jar that had been ornamented in a striking and unusual way. Besides groups of chevrons and broken columns made with the cord-wrapped stick, two rather ornate projections, like conventional lugs or handles, nearly two inches long,

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a *b*

SHERDS OF SUB-IROQUOIS VESSELS FROM CLASONS POINT

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extend up to the rim, suggesting uncommon originality on the part of the potter.

Pl. XIII, *b*, illustrates a portion of a jar found in a grave, near the shoulder of the skeleton in Pit 53. These sherds are elsewhere recorded by the writer as Algonkian, but on closer examination the form seems sub-Iroquois. Only portions of the incised design remain, most having been chipped off by frost. The body of this vessel is strongly fabric-marked, more so than is usual hereabouts. Moreover, from the unbroken lines it would seem that this appearance was not caused by the application of a wrapped paddle, as is generally the case, but was actually wrapped in a coarse, woven stuff resembling "gunny sacking."

Fig. 11, *g*, shows a sherd from a vessel of a type more common on eastern Long Island—a large, rather boldly decorated jar, with designs applied with a stick in a bold checker pattern.

Two vessels of this group were wholly plain except for fabric marks, in these cases certainly applied with a paddle.

IROQUOIS POTTERY

The distinctive character of eastern Iroquois pottery, the Mohawk-Onondaga group, though often commented on, was first

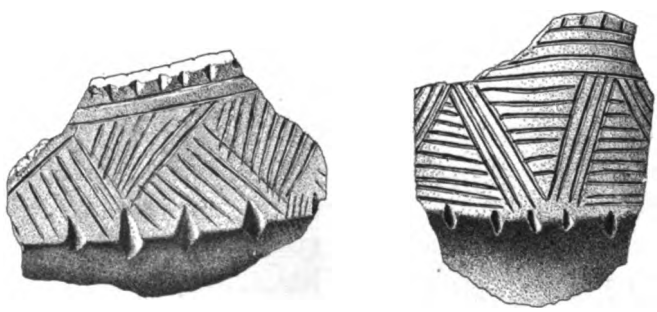

FIG. 13.—Sherds of typical Iroquois vessels.

noted by Mr Percy M. Van Epps.[1] Copies of this style became popular among the tidewater Algonkians at a period later than that during which Snakapins village flourished, although it had

[1] Aboriginal Remains in Lower Mohawk Valley, *Popular Science News*, Sept., 1902, p. 200.

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already made its appearance, as indicated by the sherds of three vessels collected there (fig. 13). It was abundant on Manhattan Island, at certain sites of Staten Island, and at Van Cortlandt Park, and some pieces were obtained at Schley avenue, including part of a rim with a conventional human face (see p. 69). It is characterized especially by the heavy collar and deeply notched angle, and by line-decoration incised or impressed in chevron groups with a carved antler or a bone stamp. In this respect the example of this group shown in fig. 14 is unusual, resembling a more westerly Iroquois form, a heavy, round, squat pot with only a narrow, thick collar.

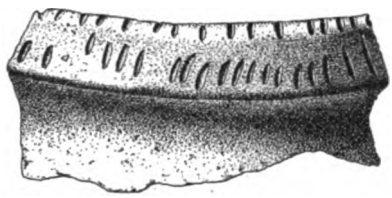

FIG. 14.—Sherd of a vessel of the Western Iroquois type.

These Iroquois vessels are quite commonly found in the upper layers of deposits in rock-shelters in Westchester county, New York, and in northern New Jersey. They seem to mark the period of the actual contact of the Iroquois with our Algonkians, and the end of transmitted influence. Probably the form appeared at Snakapins during the very last part of its life as a Siwanoy settlement. Of many fragments found locally by the writer, all have come from sites which also yielded trade objects. No sherd of this ware was obtained among thousands from Bowmans Brook site, Mariner's Harbor, Staten Island, where sub-Iroquois pottery abounded, but where no trade articles were found. A few miles away, at Watchogue, typically Iroquois sherds were collected on a small camp-site, which yielded brass arrowpoints. At Van Cortlandt Park and upper Manhattan Island, similar vessels and trade objects were collected.

THE GRAVES

The burials found at Snakapins presented little that is new to students of local archeology. All were of the customary flexed type, and interred in very shallow excavations, from ten inches to three feet, generally not more than two feet, in depth. No care was taken as to orientation, the heads being pointed in varying

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SKELETON IN PIT 44, CLASONS POINT, SHOWING BONE AWL AT FEET AND BONE BATTEN OR DAGGER AT KNEES

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directions. In two of the seven cases examined, objects were found deliberately interred with the dead. In Pit 13, which contained two male skeletons, a stemmed arrowpoint of dark flint (pl. XI, *f*) was found close to the knees of the more southerly skeleton. In Pit 44, a bone awl and a bone batten (fig. 6) were found, the former near the feet, the latter adjacent to the knees. These are implements one would associate with women's work, yet the skeleton has been identified by Dr Hrdlička as that of a large adult Algonkian male. In fact all the dead at Snakapins were adult males.

Pit 25 held a burial peculiar in that it was flexed on its back, and covered with a pile of heavy bowlders. Although badly crushed and in poor condition, the fact that the teeth were almost worn away, as is usual in all local Indian remains, would indicate that the skeleton was that of a native.

Pit 26 contained a skeleton buried at a time slightly following European contact, as in the grave fill, not deposited by design with the dead, were a beef-rib, cut off with a metallic saw, and a piece of the stem of a Dutch white-clay trade pipe. This circumstance shows only a slight knowledge of the Dutch, for burials about twenty years later would have had brass kettles, beads, bottles, and iron articles in association.

In the case of the burials in Pit 13, an adjoining pit (No. 12) held a large number of huge oyster-shells, apparently the remains of a feast. The aged male found in Pit 23 seemed to have been buried in a mere refuse pit. In Pit 25, the case of the skeleton buried under the stone-pile, little pockets of oyster-shells were found among the stones. Southwest of Pit 26, which contained a skeleton, was a small, bowl-shaped bed of oyster-shells which touched the remains. In Pit 44 (pl. XIV), shells, ashes, bones, and feast débris were found beneath the skeleton, and this was true of the burial in Pit 53. In other words, a feast seems to have been a usual part of the mortuary ceremonies.

At Schley avenue, greater variation in the treatment of the dead was observed. In Pit 1, under a 14-inch layer of shells was a jumbled mass of human bones, representing two skeletons, one minus the skull; lower still was the flexed skeleton of a young

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woman, and nearby another flexed body, that of a male. In one case a stone of about a hundred pounds' weight lay on a skull. In Pit 7, under feast débris, was a stone-pile covering the upper portion of the skeleton of a young person with one of the stones, weighing thirty or forty pounds, on the head, while scattered over the stones were fragments of the skull of an aged person.

In the shellheap two burials of children of an older period were found. In Pit 17 were the flexed remains of a child, with feast débris, and, as in Pit 13 at Snakapins, with a stemmed point of white quartz at the knees. In Pit 40 were traces of a child's remains, with feast débris. In all there were seven or eight burials.

It may be fairly said, then, that flexing the body, sometimes covering it with large stones, and holding a wake feast, were established funeral customs of the Siwanoy. The placing of articles in the grave was unusual, unless such objects as baskets, wooden utensils, and skins and fabrics, which of course would long since have decayed, accompanied the dead at the time of burial.

If, as seems probable, the later pit group at Schley avenue was synchronous with the Indian war which commenced in 1643 by Kieft's massacre of the natives near Manhattan, that fact would account for the relatively large number of dead, slain perhaps during the succeeding years of fighting. On the other hand, what were apparently empty graves were found there and at Snakapins, and we know that the Indians hereabouts sometimes took their dead with them when they changed their abode, hence after the sale to Cornell the Siwanoy might well have taken their beloved or recent dead to new graves at Schley avenue. Two bone burials, that is, masses of human bones interred after the decay of the flesh, were found at the Schley Avenue site, and two empty graves at Clasons point. This evidence, however, is purely circumstantial.

Two comparatively little known accounts of native mortuary customs will bear quotation at this juncture.

Wassenaer[1] tells how the flexing of the dead was accomplished:

"When they have a corpse, they place it, in the act of dying, squat on the

[1] Historie van Europa, Amsterdam, 1621–1632, *Documentary History of New York*, vol. III, p. 29.

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heels, like children sitting in this country before the fire; and so lay it in the grave, all sitting: its face to the east."

Next we have a detailed account by Van der Donck, written in 1656.[1] It may be noted that Wassenaer is correct in his description of the sitting posture of the dead, but laid on one side, and that Van der Donck is in error in stating that the attitude is one of sitting upright. Curiously, all writers mention the placing of utensils, some, like kettles, certainly imperishable, with the dead. This may have been true of the vicinity in late Colonial times, but the custom was not in vogue, except in rare instances, at an earlier date. It was not common even among the Iroquois until the dawn of contact with white people.

"Whenever an Indian departs this life, all the residents of the place assemble at the funeral. To a distant stranger, who has not a friend or relative in the place, they pay the like respect. They are equally careful to commit the body to the earth, without neglecting any of the usual ceremonies, according to the standing of the deceased. In deadly diseases they are faithful to sustain and take care of each other. Whenever a soul has departed, the nearest relatives extend the limbs and close the eyes of the dead; and after the body has been watched and wept over several days and nights, they bring it to the grave, wherein they do not lay it down, but place it in a sitting posture upon a stone or a block of wood, as if the body were sitting upon a stool; then they place a pot, kettle, platter, spoon, with some provision and money, near the body in the grave; this they say is necessary for the journey to the other world. Then they place as much wood around the body as will keep the earth from it. Above the grave they place a large pile of wood, stone or earth, and around and above the same, they place palisades resembling a small dwelling. All their burial places are secluded and preserved with a religious veneration and care, and they consider it wicked and infamous to disturb or injure their burial places. The nearest relatives of the deceased, particularly the women, (the men seldom exhibit much excitement) have their periods of lamentations, when they make dreadful and wonderful wailing, naming the dead, sometimes upon their breasts, scratching and disfiguring their faces, and showing all possible signs of grief. But where a mother has lost a child, her expressions of grief exceed all bounds, for she calls and wails whole nights over her infant, as if she really were in a state of madness. If the deceased are young persons, or persons slain in war, then their lamentations are of a particular kind, and the women shave off their hair, which they keep the customary time, and then they burn the hair upon the graves of the deceased or slain, in the presence of the relations. In short, they possess strong passions, and exhibit the same with much feeling when mourning over their dead relatives

[1] *New York Historical Collections*, n.s., vol. I, p. 201.

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and friends. For the purpose of removing the existing causes of grief, and not excite sorrow in the mind of the bereaved, and as far as possible to promote forgetfulness of the friends lost, the name of the deceased is never mentioned in the presence of the relations; or when the name is mentioned, it is received as if designed to produce mortification, and as an act of unkindness. The use of tokens of mourning is common, which usually are black signs upon their bodies. When a woman loses her husband, she shaves off her hair, and paints her whole countenance black as pitch; and men do the same when their wives die, and they also wear a buck-skin vest next to their skin, and mourn a whole year, even if they have not been long married, or if the connection had not been happy —still they observe the ceremonies religiously without marrying again until the season of mourning is over."

We have some information on the post-European burial customs of the Siwanoy themselves, showing that they too adopted the custom of placing objects with the dead.[1]

"Near the entrance of Pelham Neck, is situated the favorite burying ground of the river tribes, to which the Indians brought their dead even from Horseneck, Connecticut, for interment. Numerous mounds are still visible near the water's edge, on the property of the late Mr. George Rapelje. Two of the largest mounds are pointed out as the sepulchres of the Siwanoys sachems, Ann-hoock and Nimham. The former was opened some years since, and found to contain a large sized skeleton, by the side of which lay the stone axe and flint spear of the tenant of the grave. We have examined several mounds near the water's edge; one of these held the remains of an Indian boy about 12 years old, in a sitting position, together with a beautiful specimen of native pottery formed by the hand alone, rudely ornamented with zigzag lines. In this we discovered an arrowhead and the bones of a small animal. Near the residence of Mrs. King, the remains of an Indian were found in a perfect state of preservation with a gun by his side."

Mr M. R. Harrington completely excavated the remains of the knoll on which these burials were said to have been found in 1899. He found three skeletons without accompaniments, but obtained the usual relics in some nearby pits. Others are said to have been more fortunate. At that time a portion of the burial knoll had been worn away by tides, and some sand had been carted off. Now it has been obliterated and no further data are available.

[1] Bolton, Robert, History of Westchester County, vol. 1, p. 517.

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FOOD RESOURCES

Animal Foods

The inhabitants of Snakapins lived largely on marine mollusca, fish, and crustaceans, but were good hunters. Unlike their Throgs Neck relatives, they seem not to have taken the bear or the elk. Inasmuch as no bones, teeth, or antlers of the elk were found in the surface layers of the newer pits at Weir Creek point, it may be that that animal had already become scarce east of the Hudson. However, elk-bones occur in the shellheap at Inwood, so that the Manhattan, whose relations lay west of that river, may have had access to elk long after they had passed beyond reach of the Siwanoy.

Bears' teeth and bones were absent, yet these were found at a depth at Schley avenue and also at Inwood. So far the writer has met with none on any site under Iroquois or modified Iroquois influence in tidewater New York. This does not mean that the later Algonkians ceased to kill bears, but it may indicate a change in custom concerning hunting. All the northern and central Algonkians with whom the writer has come in contact, including the eastern and plains Cree, the northern, central, and plains Ojibwa, and the Bungi, Menomini, and Potawatomi, have special observances connected with bear hunting. These invariably include the preservation of the skull, generally by placing it in a tree or on a pole, and usually the protection of the bones of the bear from falling the prey of village dogs. The introduction of this custom at the Clasons Point site about the period under consideration would account for the sudden vanishing of teeth and bones of the bear at this time. That it was not an Iroquois introduction is well known, as it was never an observance by these people. The rest of the food articles needs no comment.

A list of the food animals identified by Mr Herbert Lang and Mr John T. Nichols of the American Museum of Natural History, and by Mr William T. Davis of New Brighton, Staten Island, is as follows:

Virginia deer, *Odocoileus americanus*. The most abundant animal at both the Schley and Leland Avenue sites.

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Elk, *Cervus americanus.* Found at Schley avenue only.
Black deer, *Ursus americanus.* From Schley avenue only.
Domestic dog, *Canis familiaris.* A large native species, probably like the modern Eskimo dog. Found at both sites, both buried separately, and bone fragments in the refuse.
Raccoon, *Procyon lotor.* Abundant at both places.
Skunk, *Mephetis mephetica.* Identified only from Leland avenue.
Otter, *Lutra canadensis.* Common at both sites.
Domestic pig, *Sus scrofa domestica.* Found only in later pits and near the surface of the shellheaps at Schley avenue.

Hogs are mentioned early in Dutch Colonial history, and probably soon came into possession of the Indians. In 1640 the Raritan Indians of Staten Island were wrongly accused of stealing some pigs, and Kieft accordingly sent a punitive expedition among them, which was conducted so barbarously that an Indian war ensued.[1]

At the Bowmans Brook site at Mariner's Harbor, Staten Island, although no trade articles occurred, teeth and bones of the domestic hog were found in a shell-pit. Of course this pit may have been more recent than its neighbors.

According to a document called "Breeden Raedt,"[2] a detailed account is given of the butchery of seven Long Island Indians from Hempstead, accused, also falsely, of stealing hogs, in April, 1644. These are the earliest references the writer has been able to find concerning hogs in possession of our local Indians, although no doubt swine were early brought from Holland by the colonists. The dates are interesting, since they coincide quite independently with the time set by the writer as being about the probable date of the settlement at Schley avenue by the later Siwanoy.

Beaver, *Castor canadensis.* Identified only from Schley avenue.
Woodchuck, *Arctomys monax.* Identified only from Leland avenue.
Wild turkey, *Meleagris gallipavo silvestris.* Both sites.

Many small mammals and birds, such as squirrels, muskrats, ducks, partridges, and others, no doubt were eaten by the Indians, but their delicate bones would soon have fallen prey to the dogs.

[1] Holland Documents, *Documents Relating to the Colonial History of the State of New York*, vol. I, p. 50.

[2] O'Callaghan, *Documentary History of New York*, vol. IV, p. 67.

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It is curious that, of the many thousands of bones found, so few species should be identifiable. Judging by the quantity of their bones, some animals were far more favored as food, or more easy to obtain, than others.

Many fish-bones were found at both sites, and of marine species exclusively. These proved difficult to identify. Mr Nichols identified among the bones those of the Sting-ray (*Dasyatis*); a bit of the head-armature of a Sturgeon (*Acipenser*); a vertebra of a Smooth Dogfish (*Mustelus*); a piece of the lower jaw of a Bluefish (*Pomatomus*), and a vertebra of a Drumfish (*Pogonias*), probably. Three other bones are not readily determinable.

Tortoises were commonly eaten, but a greater variety of species was found at Clasons point than at the Schley Avenue site. Among these are the following:

Box-tortoise, *Terrapene carolina*
Painted Tortoise, *Chrysemys picta*
Spotted Tortoise, *Chelopus guttatus*
Musk Tortoise, *Aromochelys odoratus*
Snapping Turtle, *Chelydra serpentina*
Diamond-back Turtle, *Malaclemmys centrata.*

No true marine species was represented.

Of crustaceans the Blue Crab (*Callinectes sapidus*) and the Lobster (*Homarus americanus*) have been identified. These were found only at Leland avenue, though doubtless also eaten by the Indians at the Schley Avenue site.

Common at both sites were the following shell-fish:

Oyster, *Ostrea virginica*
Hard-clam, *Venus mercenaria*
Scallop, *Pecten irradians*
Land Snail, *Helix alternata*
Black Mussel, *Mytilus edulis*
Gray Mussel, *Modiola plicatula*
Two species of Conch, *Fulgur carica* and *F. caniculata.*

Vegetal Foods

Of vegetal foods we find: Corn (*Zea mays*), Hickory nuts (*Hicoria* sp. ?), Walnuts, and Sweet-flag roots.

Judging by the presence of the pipes described, the natives used a species of *Nicotiana* for smoking.

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CONCLUSIONS

Snakapins was evidently a considerable settlement of the Siwanoy Indians, which was in full life from late prehistoric times, say about 1575, until the early Dutch Colonial period, say 1625–43. As Mr Bolton has shown, the name of the locality, and probably of the village itself, was Snakapins.

The accompanying map by Mr Bolton indicates a certain regularity in the placement of the pits and graves at Snakapins. Just what this signifies we are not prepared to say. If each pit marks the position of a wigwam in the village, it may indicate that the dwellings were erected in groups approximating streets or rows, a feature not heretofore recorded.

It will be observed that, while the graves are somewhat grouped toward the southeastern end of the site, there was no special cemetery, some bodies having been interred among the lodges. It has long been known that our Indians buried in pits or fireplaces, often inside the lodge, in winter, when frozen ground made grave-digging impossible; but it seems to the writer that this may have been the usual custom, regardless of season. Cemeteries, as such, are exceptional in coastal New York, although by no means unknown, as witness the great burial ground at Tottenville, Staten Island; but elsewhere on that island, and in Brooklyn, Manhattan, and Bronx boroughs, at numerous known sites, burials commonly occur among or in the lodges, as for example at Port Washington, Long Island, Van Cortlandt Park, Mariner's Harbor on Staten Island, Throgs neck, and in and near Isham Park, Manhattan borough.

The pits discovered and opened at the Clasons Point site were of several kinds. The most common variety was of bowl-shape, averaging three feet in diameter by about the same depth. A variation of this form was similar, but much shallower—from six to eighteen inches only. These we have called "dish-shaped" pits. Still another type was circular in surface outline, like the preceding, and of the same general width, but much deeper, with vertical sides giving a barrel-shaped cross-section. A common form was a long oval, about four by two feet, and three or four feet deep. This we have designated the "oval" form. No pits of conical or

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of truncated cone shape in cross-section, like some found at Schley avenue, were uncovered, nor were there any of triangular or semi-lunar shape.

A number of the bowl and oval types were of unusually large size and depth. Not all of the pits were filled with shells, some containing principally discolored earth, wood-ashes, and charcoal, their outlines being sharply defined by the bright yellow or reddish undisturbed sand, which, as a rule, was generally much harder than the earth in the pits. Many of the pits were completely crammed with shells of the common local edible bivalves, especially the oyster, hard-clam, and scallop. In some cases these shells were so closely packed that no sand could filter between the interstices; in such instances they appeared to be unusually well preserved. In other cases the shells were sparse, and often they were partially or wholly calcined. Some contained shells of only one or two species, as in the case of the scallops, which were probably obtainable in numbers only in certain years. Some of the pits were unquestionably earlier than others, although, by their appearance and contents, all must have been nearly contemporary. At least the site seems to have been occupied for a period covering only the span of a few decades. In the instance of the later pits, these were cut into older excavations previously covered and their existence evidently forgotten. Some pits touched, or were double, by design or accident, and seem to have been in use at the same time.

The purpose of the pits was not in all cases the same. Some were employed as refuse dumps, which, when they became offensive, were cleansed by raking the offal to the sides and casting in clean sand. These probably stood close to the wigwams. Others may have been built as ovens, hot stones placed therein, filled with shellfish and covered over to steam, in a way like our modern clam-bakes. Still others may have been caches for corn or vegetables. A limited number either held fires or were burnt out to destroy the refuse. Few seem to have been real indoor hearths, but one or two contained circles of fire-stones and may have been outside kitchens. A number were secondary graves, probably being open and convenient when a death occurred in winter. Some were made for

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no other purpose than the reception of the dead, and the shells which invariably accompanied the skeleton are but the remains of the mortuary feast. Deposits of charcoal beneath the dead were perhaps from fires built to warm the earthy bed of the deceased.

In a description of the first settlement of New Netherland by the Dutch, taken from Wassenaer's *Historie van Europa*, published in Amsterdam in 1621,[1] we read:

> "It appears that the *Sickanamers*, before mentioned, make a sort of sacrifice. They have a hole in a hill in which they place a kettle full of all sorts of articles that they have, either by them, or procured. When there is a great quantity collected a snake comes in, then they all depart, and the *Manittou*, that is the Devil, comes in the night and takes the kettle away, according to the statement of the *Koutsinacka*, or Devil hunter, who presides over the ceremony."

This statement may account for the occurrence, often noted on other sites, of the dog-burial in Pit 14, since dogs were and are still commonly sacrificed to the gods by the forest Indians, most of whom still recognize a monster snake manitu. Pit 55 held the entire skeleton of a small sturgeon, about four feet long, neatly curled around its inner edge. This fish may also have been an offering.

It was noted, in cleaning the specimens, that the number of vessels represented by the sherds found in some of the pits was much underestimated in the field, fragments of the rims of as many as seven vessels sometimes occurring in one deposit. The fact that so many were represented, and that the sherds show little fitting, would indicate that the jars had been broken at a distance and the fragments carried to the pits for deposit. This, and the further point that in some pits only a single sherd occurred, may indicate that some of these pits may have held sacrificial deposits of food in which pottery vessels were thriftily represented by the deposit of a few fragments. Certainly, in grave finds in an Andaste cemetery situated near the junction of the Chemung and Susquehanna rivers, at Athens, Pennsylvania, the writer found single sherds or portions of pots doing duty as complete jars in some graves, while others contained entire receptacles.

Local tradition, as related by long-time residents of Clasons

[1] O'Callaghan, *Documentary History of New York*, vol. III, 1850, p. 29.

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point, holds that this hill was formerly called "the old Indian burying ground," and that wandering Indians visited the spot yearly to perform some small ceremony for their dead, perhaps the burying of food, well into the historic period. The tradition may be valueless, but the suggestion that some of the Snakapins pits were sacrificial spots is still worthy of consideration, even though the greater number indicate lodge-sites, or storage or refuse holes.

Analysis of the contents of the pits at Snakapins indicates plainly that the inhabitants of the place were under Iroquois influence, as is shown in detail in the foregoing discussion of the specimens. To recapitulate, this is proved by the abundance and excellence of articles of bone and antler, and the decadence of the art in stone and especially in the pottery. By comparison with the earthenware from the deeper portions of the Schley Avenue shell-heap, it is evident that the Snakapins villagers were far more advanced as potters. None of the typical archaic Algonkian ware of Throgs neck was found; a few later Algonkian forms were recovered, but by far the greater number of sherds were of a kind which we have termed sub-Iroquois. Only a few fragments of the boldly imitated jars of true Mohawk type, common on sites of the later Dutch Colonial period, were found, whereas at Schley avenue, in the upper or surface layer of the great heaps, and in the later pits, this form was better represented.

At Snakapins the only evidence of European contact was a few fragments of Colonial trade-pipe stems, and a beef-bone that had been severed with a metal saw. The Indians, therefore, abandoned the settlement soon after the arrival of the whites, probably immediately following the sale of the point. At Schley avenue, in the same levels and pits where the true Iroquois potsherds were found, pig-bones, bullets, gun-flints, and trade-pipe stems were collected, enough to show considerably more contact with whites than at Leland avenue.

Glass bottles, Dutch glazed earthenware, iron tomahawks, wampum, and quantities of glass beads, such as mark Indian sites of the late Colonial period, were wanting, hence we know that at Schley avenue the Indians did not remain in a body many years

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after contact with civilization, as history and archeology show them to have done at Pelham bay. Of course, everywhere straggling individuals, completely adopting the customs of the Dutch, remained about the settlement for years.

There is reason, therefore, to believe that at the close of the archaic Algonkian period in tidewater New York, when Iroquois influence commenced to make itself felt, tempered by passage through the lands of the tribes of the upper Hudson, the nations of the Schley Avenue site changed their abode for the adjacent Clasons and perhaps Castle Hill points, which they held for more than half a century, until the arrival and establishment of the colonists, possibly until 1643, when, as Bolton has recorded, Cornell bought Clasons point of their sachems, then resident at Castle hill. Since Cornell no doubt demanded their removal, as was customary when the whites bought land of the Indians, those who dwelt at Snakapins left, and alone, or with their Castle Hill companions, returned to Throgs neck, where they abided a short time, when they were ousted by the disastrous Indian war engendered by the Dutch.[1]

At any rate, the character of the Snakapins remains shows them to have covered a period of local culture development that would exactly fit the gap in occupancy between ancient and modern times at Throgs neck.

[1] The Breeden Raedt, published in Amsterdam in 1649, reprinted in O'Callaghan's *Documentary History of New York*, vol. IV, p. 67, states that 1,600 Indians were massacred by Kieft's orders between 1643 and 1644, many of these having no knowledge of the Dutch and dwelling at out-of-the-way places, where they were searched out and slain.

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EXPLORATION OF ABORIGINAL SITES AT THROGS NECK AND CLASONS POINT, NEW YORK CITY

I. THE THROGS NECK OR SCHLEY AVENUE SHELLHEAP
II. SNAKAPINS, A SIWANOY SITE AT CLASONS POINT

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